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OLEATES AND OLEO-PALMITATES.

By L. Wolff, M.D.

Read at the Phamaceutical Meeting, October 18.

Since the publication of my article on Oleic Acid and the Oleates, "American Journal of Pharmacy," 1879, page 8, there has been much written on the subject of the oleates and much complaint made of their instability, their indefinite character and, above all, their price. That the oleates were destined to play a most important part amongst therapeutics, and largely applicable for dermic medication instead of many of the unsightly and often inert ointments in use until now, is a fact that cannot well be disputed. That a substance which is applied to the cutaneous surface, dissolved in the vehicle containing it, will prove more efficacious, by penetrating deeper into the tissues than an insoluble powder distributed on the surface can also not be denied.

When the oleates were first proposed on theoretical grounds, and introduced in medicine, they were thought to be the desiderata by which dermic medication could be accomplished; but alas, like many *a priori* conclusions, the practical results, while in many instances very satisfactory, left in general much to be desired.

The cause of this is possibly largely attributable to the fact that, so far, our oleates have been of a character scarcely entitling them to that name, for a solution of a metallic oxide in acid without a reaction or the presence of water cannot be considered a salt according to the present views of chemical knowledge. That they are oleic solutions and, as such, of therapeutic value is, however, not to be disputed, though even as such they are of indefinite strength, if we take the so-called oleate of mercury as example, for when the proper amount of mercuric oxide is added only a small quantity of it remains in solution while the greater part, especially if the acid is not pure, is very soon reduced to metallic mercury and, as such, precipitated. If

such is the case with pure oleic acid, it certainly is much more so with the oleic acids found in the market, of which the greater portion is the oleo-stearic acid of the candlemakers, deprived of its coloring matter, while others are oleo-palmitic acids derived from either precipitating olive-oil or almond-oil soaps. Either of them soon gives rise to heavy precipitates, as the oleic acid itself has a tendency to take up the oxygen of the oxide and reduce it to the metallic state. Oleic acid, if pure and freshly made, will keep considerable of the oxides in solution, but the very excess of oleic acid present is the cause of its gradual change and deterioration, and though the appearances of the preparation may be saved by repeated filtration, the result is very soon that of an oleate containing no metallic salt in solution.

Actuated by the desire to prepare true oleates, and to obtain them by a cheaper method than the retrograde process of first making acid from a true oleate and then making a series of oleic solutions, led me to experiments of which I already spoke in one of our last year's meetings.

I have already mentioned the fact in my former paper on this subject, that petroleum benzin was a ready solvent for oleates, while it appeared to be a non-solvent, or at least a very limited one at ordinary temperature, of palmitates and stearates. I had utilized this to separate the lead oleate from the lead palmitate in making oleic acid. That chemically true oleates could be made in the same way as the lead oleate in that process was an inference which could be readily drawn, but which proved practically of not much success. As soaps, however, could be readily decomposed by metallic salts into sodium or potassium salts and oleo-stearates or oleo-palmitates of the metals there was no difficulty in obtaining the joint salts which could be separated in turn by the use of benzin. After conducting experiments on that subject, I found that this method of preparing oleo-stearates had been proposed in an article—translated from a French journal—in the "Medical Times," and reprinted in the "American Journal of Pharmacy," January, 1874, page 28.

In order to obtain true oleates, I saponified pure oleic acid, prepared according to my method, as published in my former article, with caustic soda until saponification was complete, dissolved the sodium oleates so obtained in water and precipitated with metallic salts with the results of obtaining oleates that were stable and definite in character, possessing besides therapeutic properties of which I satisfied

myself by the experiments which some of my medical friends conducted in hospitals and dispensaries. As oleates prepared in this manner, however, possessed the disadvantage of a high price, I used consecutively soap of the oil of sweet almonds, and ultimately the ordinary castile soap, with quite as much success.

My process in general for obtaining oleates is as follows: One part of castile soap (sodium oleo-palmitate) is dissolved in eight parts of water, the solution so obtained is allowed to cool and stand for 24 hours, when there will be a considerable deposit of sodium palmitate, while the supernatant liquor, containing mostly sodium oleate, is drawn off and then decomposed with a concentrated solution of a metallic salt which, if obtainable, should contain no free acid to prevent the formation of free oleo-palmitic acid. The heavy deposit of oleo-palmitate so derived is strained off, pressed out in the strainer and the adherent water evaporated in a water-bath; after this it is dissolved in about six to eight times its quantity of petroleum benzin and the insoluble palmitate is left to subside while the solution of oleate decanted therefrom is filtered off. The benzin evaporated will yield an oleate that is entitled to that name, as it is a chemical combination and will remain stable and efficacious.

The oleates, so prepared, present an amorphous appearance, while the palmitates are of a crystalline character. While I have noticed a marked affinity of some of the metallic salts for palmitic acid, the absence of it in others is remarkable. Thus, mercury, zinc, bismuth and lead combine with palmitic acid abundantly, but iron and copper seem to form an exception herefrom, and while the oleates of mercury, iron and copper seem to be desirable as therapeutic agents, the oleo-palmitates of zinc, bismuth and lead appear preferable. To take up each one of the above-named alone, I would state that the oleo-palmitate of zinc is a pulverulent substance, imparting a greasy touch, not unlike that of powdered soapstone, and will readily dissolve in warm oils, cosmolin, etc., imparting to them a semi-diaphanous appearance on cooling. One part dissolved in five of cosmolin makes an ointment of zinc oleate, of which I have heard much praise in eczema and other dermic affections. Applied dry to excoriated and erythematous surfaces it acts mechanically by relieving friction, and by its astringent properties it helps to correct and heal the parts. It is prepared by precipitating the soap solution with zinc sulphate.

The oleo-palmitate of bismuth is of an unctuous consistence, and I am advised has yielded very good results in chronic skin affections where an alterative action seems desirable. To prepare it the solution of soap was decomposed by a glycerin solution of the crystallized nitrate of bismuth.

The oleo-palmitate of lead is nothing more than the lead plaster of old, but it is free from glycerin, beautifully white, and dissolved in olive oil makes a litharge ointment more elegant and quicker than the recently-proposed process of precipitating the hydrated oxide of lead from the basic lead acetate solution, and saponifying it with olive oil in the presence of water. It affords also a very excellent substitute for the old lead plaster, and can readily be made in a very short time at an expense not exceeding that of the old method. It is best prepared by precipitating the soap solution with the officinal solution of lead subacetate.

The oleate of mercury is well-known for its therapeutic application, and I dwell on it no further than to state that it should be diluted with cosmolin, unless it is needed to make a marked mercurial impression. It should be prepared by precipitating the soap solution by a concentrated watery solution of mercuric chloride. The precipitate so formed should be heated to the boiling point to insure its subsidence. It is then deprived of its water in a water-bath, dissolved in benzin and filtered, and the filtrate left to evaporate.

The oleate of copper is as yet not used, but I should think would, if diluted with oil or cosmolin, make an excellent stimulant application to indolent ulcers, lupus, etc. The soap solution, precipitated with a solution of cupric sulphate, yields it readily.

The oleate of iron has as yet found no use, to my knowledge, though in the formulas proposed for ferrated codliver oil this is evidently formed. That a definite quantity of it dissolved in codliver oil would serve quite as well, seems obvious, though its odor and taste is not encouraging. I have made it by precipitating the soap solution with a solution of ferrous sulphate, but found that from a ferrous the new-formed salt readily changed to the ferric state.

I have still a number of other metallic salts under experimentation, the results of which I intend to make the subject of another paper. While I do not consider that I have by far exhausted the research in the direction of these valuable therapeutic agents, I trust that I have re-awakened the interest therein which, from incompleteness, began to flag, and that hereafter the oleates will be considered rather as chemically defined bodies than mere unstable solutions of metallic oxides in oleic acids.

Philadelphia, October, 1881.

EXAMINATION OF ERICACEOUS PLANTS.

By Edward N. Smith, Ph.G.

From an Inaugural Essay.

Specimens of Chimaphila maculata, *Pursh*, Pyrola elliptica, *Nuttall*, P. chlorantha, *Swartz*, and P. rotundifolia, var. asarifolia, *Michaux*, were collected by myself during the months of June and July, 1880, carefully dried and powdered. With a view of ascertaining if they contained the same constituents as found in other ericaceous plants, I followed the process of Julius Jungmann ("Amer. Jour. Phar.," 1875, p. 202), by which he isolated the constituents of Uva ursi.

The coarsely powdered leaves were exhausted with water by percolation, the infusion heated to the boiling point and strained, when a flocculent coagulum of albumen was left on the strainer. The infusion was then concentrated and treated with freshly prepared hydrated oxide of lead. The precipitate was separated by a filter and the filtrate still more concentrated and divided into two portions; the first was set aside in a warm place to evaporate spontaneously, the second was treated with strong alcohol which produced a bulky precipitate.

The precipitate was separated by a filter and the alcoholic filtrate was divided into two portions; the first was set aside in a warm place to evaporate spontaneously, the second was evaporated to a syrupy consistence, then treated with ether and the ethereal solution evaporated at ordinary temperature. The residue consisted of a small quantity of crystals in prismatic needles mixed with a considerable quantity of resinous matter.

The alcoholic solution, after evaporation, yielded a dark colored extract which was re-dissolved in alcohol, then treated with animal charcoal, filtered and again evaporated at ordinary temperature. The residue contained a small quantity of acicular crystals.

The aqueous solution, after evaporation, yielded a soft extractive mass which was treated with a mixture of alcohol and ether; the solution was evaporated at ordinary temperature and yielded crystals in prismatic needles having a silky lustre.

All the crystals thus far obtained proved to be arbutin.

A second quantity of coarsely powdered leaves was boiled with water, the decoction strained and then treated with a concentrated cold aqueous solution of acetate of lead as long as a precipitate was thereby produced. The precipitate was separated by a filter and the filtrate

treated with a solution of subacetate of lead until it no longer produced a precipitate; this was also separated by a filter and the filtrate freed from the lead by sulphuretted hydrogen, the sulphide of lead separated by a filter and the excess of sulphuretted hydrogen expelled by heating the filtrate. The filtrate was then evaporated to a syrupy consistence, re-dissolved in water and treated with animal charcoal, then filtered and again concentrated and while hot set aside. The solution, on standing, deposited crystals of arbutin in small bunches of needles of a white color.

Concentrated sulphuric or hydrochloric acid added to the crystals gradually dissolved them without change of color.

With nitric acid the crystals first turned black and then slowly dissolved, the acid assuming a yellow color and giving off fumes of nitrous acid.

A dilute aqueous solution of the crystals also produced the characteristic blue color with Jungmann's phosphomolybdic acid and ammonia test.

This test will also produce a blue color with solutions of morphia, aconitia, atropia and berberina, but not in such dilute solutions as is the case with arbutin, of which—according to Jungmann—1 part is distinctly indicated in 140,000 parts of water. The color is (in each case) dissipated by heat.

With a view to ascertain the value of this test for detecting the presence of arbutin in plants without isolating it, experiments were made with the infusions of belladonna, aconite, berberis, digitalis, senna, lobelia, toxicodendron, absinthium, sabina and others. The infusions were diluted with sufficient water to make them perfectly colorless, then rendered alkaline with ammonia; but on the addition of phosphomolybdic acid they did not produce the characteristic blue color which is produced with infusions of the ericaceous plants known to contain arbutin.

Examination of the Precipitates.

1. The precipitate obtained on adding hydrated oxide of lead to the infusion of the leaves, and separating by a filter, was well washed and dried, then suspended in water and decomposed by sulphuretted hydrogen; the sulphide of lead was separated by a filter and the excess of sulphuretted hydrogen expelled by heating the filtrate. The filtrate was then concentrated and divided into two parts.

Part first was treated with a solution of gelatin, which produced a precipitate denoting the presence of tannin; the precipitate was separated by a filter and the filtrate treated with a neutral solution of ferric salts, which produced a bluish-black precipitate which disappeared on heating the solution, thus indicating the probable presence of gallic acid.

Part second, treated with a solution of calcium chloride and lime water, produced no precipitate, thus denoting the absence of tartaric acid; but, on heating the solution to the boiling point, a precipitate of calcium citrate was thrown down from the solution obtained from Chimaphila maculata, but no precipitate was produced with the solutions obtained from the plants of the genus Pyrola.

The solutions were then concentrated and treated with strong alcohol, which produced a precipitate of calcium malate in the solutions obtained from the plants of the genus Pyrola, but none in the solution which was separated from the citrate of calcium precipitate.

The organic acids as obtained by these investigations, therefore, are: In the plants of the genus Pyrola, tannic, gallic and malic acids, and in Chimaphila maculata, tannic, gallic and citric acids.

2. The precipitate obtained by treating the concentrated infusion with strong alcohol was then treated with water in which it mostly dissolved; the solution was filtered and found to contain glucose by Trommer's test.

The filtrate was then concentrated and again precipitated with strong alcohol; the precipitate was completely soluble in water and found to consist of gum and coloring matter.

3. The precipitate obtained on adding a solution of acetate of lead to a decoction of the leaves, and separating by a filter, was well washed, then suspended in water and decomposed with sulphuretted hydrogen, the sulphide of lead separated by a filter and the excess of sulphuretted hydrogen expelled by heating the filtrate. The filtrate gave a precipitate with gelatin; a dark green color with ferric salts; a reddish color with caustic alkalies, and a precipitate by Trommer's test.

4. The sulphide of lead obtained on removing the excess of lead from the aqueous decoction of the leaves by sulphuretted hydrogen was first treated with hot water and then with hot alcohol, the solutions filtered and concentrated in a water-bath and, while hot, set aside. The aqueous solution, on standing, deposited a small amount

of crystals of arbutin in small bunches of needles, but no crystals were obtained from the alcoholic solution.

On heating the mother liquors from arbutin with dilute sulphuric acid some ericolin was obtained as a brown-yellow resinous mass. It was stated by Jungmann to be soluble in alcohol but insoluble in water and could be purified by dissolving it in the former and precipitating by the latter. In experimenting with it, I found it to be soluble in both alcohol and water.

The leaves previously exhausted with water and dried were then exhausted with strong alcohol by maceration and percolation, and the dark green tincture thus obtained was evaporated, then treated with water and the residue washed with ether and dissolved in hot alcohol which, on cooling, deposited urson as an apparently amorphous mass, but on dissolving in hot alcohol microscopic needles were obtained.

Concentrated sulphuric acid turns the crystals black, the acid assuming a red color.

Concentrated nitric acid turns them yellow, giving off fumes of nitrous acid.

On distilling a quantity of the leaves with water, a distillate was obtained which was neutral to test paper and had a tea-like odor, probably due to a small amount of volatile oil.

These investigations were performed with specimens of each of the plants, with nearly the same results.

The organic constituents of these plants, as obtained by these investigations, are therefore:

Arbutin, ericolin, urson, tannic, gallic and malic acids (in Chimaphila maculata, tannic, gallic and citric acids), gum, sugar, albumen, a small amount of volatile oil and some coloring matter.

Ash of Flaxseed.—As a mean of 31 analyses A. Laudreau obtained 3·60 per cent. of ash, of which 24·10 per cent. with 4·6 per cent. phosphoric acid was soluble in water; 71·10 per cent. with 27·0 per cent. of phosphoric acid soluble in nitric acid, and 4·80 per cent. of silica and insoluble matter. The ash of Russian flaxseed contained 40 per cent. of phosphoric acid; the ash of flaxseed cultivated in France decreased in phosphoric acid to 15 or 20 per cent. in the second year.—*Ann. agronom.*, vi, p. 315.

THE FRUIT OF SAMBUCUS CANADENSIS.

By John Benjamin Metzger, Ph.G.

From an Inaugural Essay.

1. *Treatment with Alcohol.*—425 grams of the fruit were reduced to a fine powder, packed in a conical percolator and exhausted with alcohol, most of which was recovered by distillation; the concentrated tincture was precipitated with 3 pints of distilled water, acidulated with 1 ounce of acetic acid; the precipitate was collected on a filter, washed, dissolved in hydrate of potassium and reprecipitated by dilute sulphuric acid. A dark brown fatty resin was obtained, which, when washed and dried, weighed 3·2 grams, was soluble in ether, chloroform, alcohol and ammonia, and insoluble in benzin.

The filtrate from the first precipitate was evaporated over a sand-bath to the consistence of a syrup; to a small portion of this liquid an aqueous solution of iodine and iodide of potassium was added, which caused a dark brown precipitate, and iodo-hydrargyrate of potassium added to another portion of the liquid gave a light brown precipitate. To the remainder of the liquid a solution of acetate of lead was added as long as a precipitate was produced, then filtered, the precipitate washed with distilled water and set aside as precipitate No. 1. Solution of subacetate of lead was added to the filtrate, the precipitate washed with distilled water and set aside as precipitate No. 2. The filtrate was freed from lead by passing sulphuretted hydrogen gas into it, filtered and then boiled to drive off the excess of sulphuretted hydrogen. Upon adding some of this liquid to a boiling solution of Trommer's test a precipitate of red cuprous oxide formed, showing the presence of sugar; the liquid was also tested for alkaloids with iodo-hydrargyrate of potassium and a solution of iodine and iodide of potassium, without any results. The liquid was allowed to stand for four days; no crystals were deposited. Precipitate No. 1 was suspended in water, and the lead removed by passing sulphuretted hydrogen gas in the solution and filtering. After evaporating to a thin syrup, this solution formed a bluish-black precipitate on the addition of ferric chloride and a white flocculent precipitate with gelatin, indicating the presence of tannin. Precipitate No. 2 was treated in the same manner, and with the same results as with precipitate No. 1.

2. *Treatment with Benzin.*—425 grams of the fruit, finely powdered, were exhausted with benzin and the solution evaporated spontaneously.

The fatty substance left behind yielded to water, on prolonged boiling, nothing of importance. On saponifying the fat with potassa, decomposing the soap by sulphuric acid and distilling with water, volatile fatty acids were obtained which were free from formic and acetic acids, since, after neutralization with ammonia, ferric chloride did not produce any decided color.

A decoction of the fruit was made, and, after filtering, mixed with alcohol; a jelly-like mass precipitated, showing the presence of gum. The same solution was tested for starch with a solution of iodine, with negative results. By this partial analysis the fruit was found to contain sugar, gum, tannin, fat and a resinous substance.

THE ROOTS OF APOCYNUM ANDROSÆMIFOLIUM AND APOC. CANNABINUM.

By Edward Adolphus Manheimer, Ph.G.

From an Inaugural Essay.

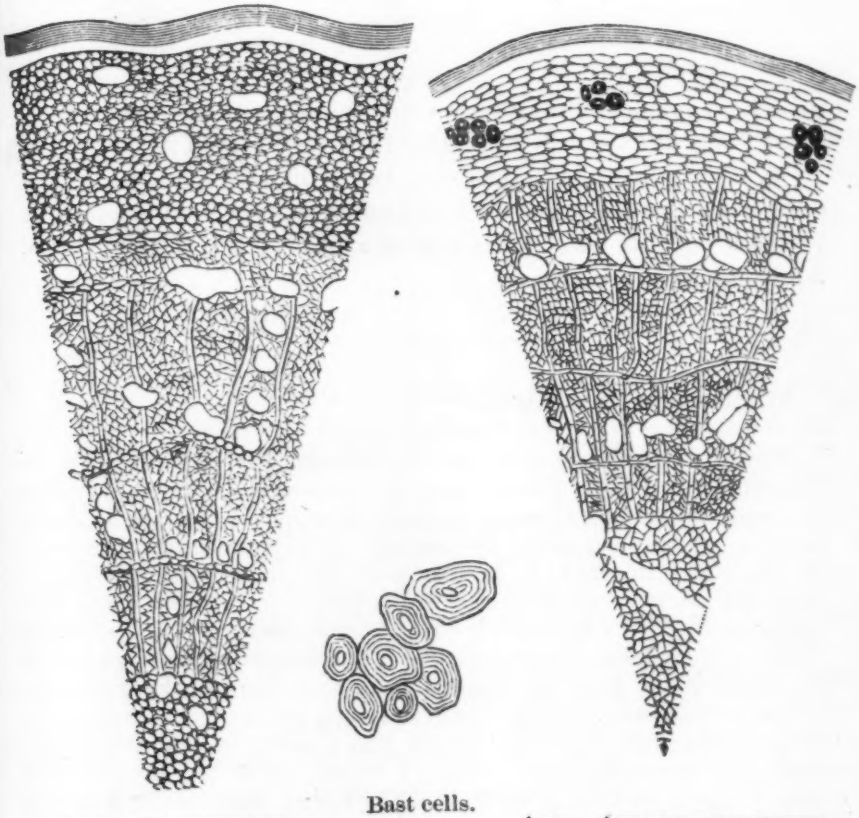
The close botanical relation of the two plants named suggested a microscopic examination of their roots, both of which are recognized by the pharmacopœia as medicinal agents. The root of Apocynum cannabinum was easily procured in commerce and identified by Prof. Maisch. A number of wholesale drug houses were applied to for the root of Apoc. androsæmifolium, but invariably a substitute was furnished, proving to be the root of Apoc. cannabinum or of a plant closely allied to it. A genuine specimen, however, was procured from the collection of Prof. Maisch.

The two plants, which resemble each other, are indigenous to the United States; but the Apoc. androsæmifolium, or dog's-bane, grows chiefly in the northern part, while the other species, called Indian hemp, is common in the southern part of the country.

The root of dog's-bane is long, about $\frac{1}{8}$ or $\frac{1}{4}$ inch thick, somewhat branched, externally dark brown, internally white. The bark is thin, longitudinally wrinkled, somewhat fissured transversely and is readily separated from the wood; the cambium line in the dry root is quite indistinct. The wood is fibrous and tenacious and encloses a pith of the same width as the bark, or even broader, and surrounded by a distinct medullary sheath. The wood is almost tasteless, while the bark has an unpleasant taste.

The root of Indian hemp is horizontal, several feet long and appears

in the market in pieces varying in thickness from $\frac{1}{8}$ to about $\frac{3}{4}$ inch. The bark is brown-gray, deeply wrinkled and transversely fissured, about one-fifth the width of the root, and in the dry state has an indistinct cambium line. The wood is yellowish, soft, porous, more particularly in the outer portion, breaks readily with a smooth even fracture, and has no, or only a minute pith. Both bark and wood have a bitter taste, but that of the former is more persistent. The stems, which are sometimes mixed with the root, have a smooth red-brown bark, which is not very thick, and a pith which has generally disappeared, leaving the stem hollow; they have a slight sweetish taste.



Bast cells.

APOC. CANNABINUM. APOC. ANDROSÆMIFOLIUM.

Transverse sections.

Under the microscope, the dog's-bane shows in the pith a few vessels and much starch; the cells are largest near the centre and are

more or less compressed towards the wood, which is traversed by many medullary rays and contains, chiefly in the outer portion, a number of vessels. The bark is composed of oblong cells, differing in size and containing starch; a few laticiferous vessels are seen and several groups of thick-walled bast cells, arranged somewhat in a circle near the middle of the bark.

The root of Apoc. cannabinum shows, in the transverse section, in the centre a few small round cells. Then follows the wood, showing about three annual layers, vessels somewhat arranged in rows, and many medullary rays running into the bark. The cells of the bark are roundish, contain an abundance of starch and also numerous laticiferous vessels.

The author also examined microscopically the root that had been sold to him as that of Ap. androsæmifolium, and found it in most respects to agree physically and microscopically with the root of Apoc. cannabinum examined by him, the differences observed (two circles of wood, curved medullary rays, etc.) being of no importance. It is quite likely that nearly all the fluid extract of Apoc. androsæmifolium which is sold in our market has been made of this substitute or of Apocynum cannabinum.

Unguentum Zinci Oxidi.—

Editor American Journal of Pharmacy:

DEAR SIR—Having tried several formulas for preparing oxide of zinc ointment, I have settled upon the following as easy of preparation and without use of other ingredients than those of the Pharmacopœia. It was suggested by the use of glycerin in the process of Mr. R. F. Fairthorne; I also use white wax, it being impossible to keep the ointment of proper consistency in this climate without such addition; I strain benzoated lard, as recommended by Mr. H. M. Wilder, it giving a nicer preparation and keeping equally as well as the unstrained. Rub the oxide of zinc to a fine powder, place in a warm mortar and gradually add the lard, previously melted, triturating thoroughly; stir until cool; if wax is added it should be melted with the benzoated lard. While I do not claim the process to be original, it is at least so with myself. I send it, thinking it may be of use to your other numerous readers who have been annoyed with the ointment. The ointment is smooth and white and does not spoil.

Yours truly, R. ANTON.

Savannah, Ga., Sept. 13, 1881.

ERGOTIN.

How should Bonjean's Ergotin be Prepared, and what Advantage, if any, does it possess over the Extract of Ergot of the German Pharmacopœia?

By C. Lewis Diehl.

From a paper read before the Kentucky Pharmaceutical Association.

M. Bonjean's original paper[1] is surprisingly indefinite in its directions for the preparation of this medicament. Mr. B. says essentially that if to an aqueous extraction of ergot, evaporated to a *clear* (?) syrup, a large excess of alcohol be added, all the gummy matters are precipitated, and the soft extract, remaining after the evaporation of the clear alcoholic liquid, represents the ecbolic, and particularly the hemostatic action of ergot, without any of the poisonous qualities that the drug is said to possess. The indefinite character of these directions has given rise to various views as to what constitutes Bonjean's ergotin, some aiming to precipitate only the *gummy* (?) matter, as for instance the formula of the German Pharmacopœia; while others claim that it is necessary to continue the addition of alcohol, specific gravity 0·885 or thereabouts, as long as a precipitate is occasioned by that liquid, as for instance Carles,[2] who claims the product so obtained to be ergotin within the meaning of Bonjean.

In view of the recent investigations of Dragendorff and Podwissotzky,[3] it has become a proper inquiry whether the use of alcohol should not be limited to the precipitation of gummy substances. According to these experiments the activity of ergot is mainly due to two components, viz., sclerotic acid, soluble in alcohol of 80 per cent., and scleromucin, not precipitated by alcohol of 40 per cent., but insoluble in alcohol of 45 to 50 per cent. The ecbolic value of these two substances appears to be about equal; but sclerotic acid is present in largest amount in fresh ergot, while old ergot contains more scleromucin. If these views are correct, then it is a mistake to use a large excess of alcohol, and its use should be clearly confined to the precipitation of gummy matter, and no further. If, on the other hand, by the use of a larger quantity of alcohol, or rather a stronger alco-

[1] "Comptes Rendus," July 17, 1843.

[2] "Rép. de Pharm.," 1878, No. 4.

[3] "Proceed. Am. Pharm. Asso.," 1876, p. 119; "Amer. Jour. Phar.," 1876, p. 413.

hol, we can obtain an ergotin that represents the ecbolic action of ergot in a more concentrated form (irrespective of any money-loss by the sacrifice of scleromucin); then it still remains to determine a formula whereby a product of as nearly constant composition as is possible with a substance of such complex nature may be uniformly secured. To determine these points three distinct kinds of experiments have to be made, viz., pharmaceutical, chemical and physiological. In the present inquiry I have confined myself to the pharmaceutical experiments, and while these are by no means complete, they appear to me of sufficient interest to warrant publication.

Forty-five troyounces of ergot of good quality, in moderately fine powder, were macerated 36 hours with 24 fluidounces of cold distilled water. The moist ergot, having been passed through a No. 18 sieve, was packed lightly in a percolator provided with a Squibb's tube, and after pouring on distilled water until it had penetrated the entire column, it was allowed to stand again 36 hours, and then percolated. The percolate was collected in nine fractions, each of 15 fluidounces, each three consecutive fractions corresponding to 1 fluidounce of percolate for 1 troyounce of ergot employed, and constituting a set. The three sets of percolates so obtained were designated A, B, C, and the fractions in each 1, 2, 3, respectively. The quantity of dry extract contained in each fraction was determined by evaparating one or two centigrams of the fraction on a watch-glass, and completely drying on a water-bath. In this way the following rate of exhaustion was determined:

Set A:	No. 1	contained	1,909	grains.	B: 239	grains.	C: 75	grains.
"	2	"	1,462	"	152	"	54	"
"	3	"	690	"	86	"	46	"
Dry extract,			4,061	"	477	"	175	"

Making a total of 4,713 grains dry extract, or 21·81 per cent. from 21,600 grains of ergot, and showing that the first fluidounce of percolate for each troyounce of ergot contains 86 per cent., the second 10 per cent. and the third 4 per cent. of the total soluble matter. For practical purposes, therefore, and in view of the ease with which aqueous solutions of ergot undergo change,[1] 2 fluidounces of percolate for each troyounce of ergot, representing 96 per cent. of all the soluble matter, would be the proper limit of percolation. It proves, also,

[1] The temperature of the room during these experiments ranged from 50° to 65° during the day, and to near the freezing point at night.

what I long had reason to believe, that ergot is more readily extracted by water than is commonly believed, and that preliminary extraction with ether, benzin, etc., to remove fixed oil is entirely superfluous.

After discussing the uncertainty of the directions by different authorities as to the amount of concentration of the infusion by evaporation and the effect of alcohol upon this liquid, the different formulas are reproduced.

Bonjean's original process, which was communicated by him to "Comptes Rendus," July 17, 1843, and a translation of which appeared in the "Am. Jour. Pharm." in October of that year (vol. xv, p. 219) is as follows:

"Powdered ergotized rye is treated with water in a displacement apparatus, and the aqueous solution heated on a water-bath. By the action of the heat this solution sometimes coagulates from the presence of a certain quantity of albumen, sometimes not. In the former case the coagulum is separated by filtration, the liquid evaporated over a water-bath to the consistence of a clear syrup, to which a large excess of alcohol is then added, which precipitates all the gummy substances, the liquid is then placed aside until all the gum has subsided and the solution has reassumed its transparency and brightness, when it is decanted and reduced over a water-bath to the consistence of a soft extract. In the second case, the aqueous solution is brought immediately to a semi-syrupy state, and them treated as above with alcohol in order to obtain the extract.

"By this process a very homogenous soft extract is obtained, of a reddish-brown color and of an agreeable odor of roast meat, owing to the presence of ozmazom, and of a slightly piquant and bitter taste, resembling more or less that of spoiled wheat. It forms with water a beautiful red solution, perfectly transparent. Five hundred grams of ergot afford 70 to 80 grams of extract."

Carles' process[1] is as follows: One kilogram of recently collected (best in July) ergot is dried in a moderately warm place during 24 hours, reduced to a moderately fine powder, moistened with one-third its weight of water, macerated for 12 hours and exhausted by displacement with water. The percolate is evaporated on a water-bath to one-third the original weight of ergot and mixed with 2 liters of 90 per cent. alcohol, stirred well and allowed to settle. A fresh addition

[1] "Proceed. Am. Pharm. Asso.," 1878, p. 96; "Amer. Jour. Phar.," 1878, p. 385.

of alcohol must not produce any further cloudiness, otherwise more is to be added until this point is reached. After 24 hours the clear liquid is removed, the residue washed with a little alcohol, the united liquids distilled and the residue evaporated to the proper consistence, the yield being 80 or 90 grams.

German Pharmacopœia process[1] *for "Extractum secalis cornuti"* ("Mutterkornextract," "Ergotinum," "Extractum hemostaticum"): Take of ergot, coarsely powdered, 1 part; distilled water, 2 parts. Macerate for 6 hours, strain and express. Pour upon the residue distilled water 2 parts, and operate as before. Evaporate the mixture and filtered liquids to the consistence of a thin syrup, and add of diluted alcohol 1 part, mix and set aside a day, stirring frequently, then filter and evaporate to the consistence of a thick extract. The extract has a reddish-brown color, forming a clear solution with water. According to Dr. H. Hager,[2] ergot yields 14 to 18 per cent. of this extract.

The obscure point in Bonjean's process is, "What constitutes a large excess of alcohol?" Any quantity exceeding the weight of the aqueous extract may be considered an excess, and if it amounts to one and one-half or twice the weight, it might be considered a large excess. When the infusion is evaporated so that 2 grains shall retain 1 grain of water, the resulting extract is of a syrupy condition. If we, therefore, add to such an extract an equal weight of alcohol the relation of alcohol to water is as 2:1; if we increase the weight of alcohol by one-half, 3:1; if we double it, 4:1, etc. In France, an alcohol of 90 per cent., having a specific gravity of 0·83 to 0·84,[3] is employed. Taking the mean of these specific gravities we would have an alcohol of specific gravity 0·835, containing 85 per cent. by weight of absolute alcohol. The following approximately shows the percentage strength of alcohol that would effect the precipitation in 2 parts of syrupy aqueous extract of ergot containing 1 part of water.

Alcohol, sp. gr. .835.	Percentage.	Alcohol, sp. gr. ·835.	Percentage.	Alcohol, sp. gr. ·835.	Percentage.
2 parts	56·66	5 parts	69·16	8 parts	75·55
3 "	63·75	6 "	72·85	9 "	76·50
4 "	68·00	7 "	74·37	10 "	77·27

As before stated, the "large excess of alcohol" directed by Bonjean is an indefinite quantity. Not so, however, with Carles, who directs

[1] German Pharmacopœia, translated by L. L. Lochman, 1873.
[2] "Pharm. Praxis.," vol. i, p. 1118.
[3] Dorvault's "L'Officine," third edition, 1850.

the aqueous extract to be evaporated to one-third of a kilogram and then the addition of two liters of alcohol. It has been calculated on the basis before explained, that the aqueous extract would retain about one hundred and sixty-seven grams of water; two kilograms of alcohol, specific gravity 0·835, would weigh sixteen hundred and seventy grams; hence, the proportion of alcohol to water would be as 10 : 1, or the highest proportion in the above table.

The diluted alcohol of the German Pharmacopœia is obtained by mixing two parts by weight of alcohol, specific gravity 0·830 to 0·834 with one of water, and is stated to have a specific gravity of 0·892 to 0·893, and to contain sixty-nine to sixty-eight per cent. of absolute alcohol. Taking the highest strength as the proper one, an alcoholic strength would result in this process considerably lower than the lowest proportion in the table, the percentage of absolute alcohol being 50·4, while a preparation of 2 : 1 would give 56·66 per cent. Besides these two alcoholic strengths, a third one containing sixty-five per cent. of absolute alcohol was adopted for my experiments, in the belief that this might more nearly correspond to the strength originally obtained by Bonjean. Such a strength is obtained when one part of water is mixed with 2·5 parts of alcohol of specific gravity 0·820 (or twenty-six parts, specific gravity 0·822).

The three sets of percolates were separately concentrated to the syrupy condition within the above meaning, viz.:

Set A:	containing	4,061	grains of dry extract to	8,122	grains.
Set B:	"	477	" "	954	"
Set C:	"	175	" "	350	"

In the case of set A, being more concentrated, the first fraction was evaporated by itself, the second and third together to a very thin syrup and then added to the first, and the evaporation completed. Set A was selected for making ergotin by the three different methods, suitable fractions being taken for each. From set B and C ergotin was only prepared by that method in which an alcoholic strength of 65 per cent. obtains.

This method I shall provisionally designate as *Bonjean's (?) method.* In each case 2·5 parts alcohol, specific gravity 0·820, was added to two parts of the syrupy extract, followed by sufficient of a mixture of 2·5 parts of the same alcohol and one part of distilled water to make the mixture weigh six parts. After agitating a number of times the precipitate was allowed to subside, the clear liquid decanted, and the pre-

cipitate washed several times successively with two parts of the same diluted alcohol. The united solutions were filtered, the amount of dry substance ascertained by evaporating a few cubic centimeters, and the whole was then distilled and evaporated to such consistence that a firm extract remained, retaining ten per cent. of moisture. In this manner the yield of the fraction employed of set A, calculated for the entire quantity, corresponded to 2,187 grains; of set B to 235 grains; of set C to 78 grains; making a total of 2,500 grains, or 11·57 per cent. of the ergot used. The ergotin obtained from set A was dark brown, uniform, of the consistence of a firm extract, translucent, readily and rapidly soluble in water, forming a clear solution, and had an odor resembling fresh-baked rye bread. The ergotin obtained from set B resembled that of set A, but was less homogeneous, somewhat granular. The ergotin obtained from set C was somewhat less homogeneous than that from set B, but otherwise resembled that of set A. The precipitate in each case had and retained during the entire operation the consistence of thick treacle. In the case of sets A and B it had apparently the same brown color. In that of set C, however, it was dark brown and granular, and on the sides of the flask numerous crystals were deposited, showing that the saline constituents of the ergot were more copiously dissolved in this portion than in the percolates previously obtained.

Carles' Method.—To a suitable fraction of the aqueous extract of ergot from set A alcohol of specific gravity 0·820 was added so as to produce with the water contained in the extract an alcohol containing 77·27 weight per cent. of absolute alcohol. The liquid was then brought to the weight of five times the weight of the extract with alcohol of 77·27 per cent. and the precipitate, which had been allowed to subside after frequent shaking for some hours, was washed several times successively with alcohol of the same strength. The united liquids were filtered, the amount of dry extract contained therein determined, and it was then distilled and evaporated to the consistence of an extract retaining ten per cent. moisture. The quantity so obtained, when calculated for the whole quantity of set A, corresponded to 2,080 grains. Comparing this yield with that obtained from the same set by Bonjean's (?) method, set B would have yielded 223·5 grains; set C, 74 grains; making a total of 2,377·5, or 11·05 per cent. The ergotin obtained by this method had the same consistence and characters as that obtained from set A by Bonjean's (?)

method. The filtrate, before concentration, was tested with alcohol of specific gravity 0·835, an equal volume of which occasioned no further precipitate. The filtrate was, however, somewhat lighter in color than that from set A. The precipitate had the same character as that obtained from set A by Bonjean's (?) method.

German Pharmacopœia Method.—Following this method exactly, with another fraction of the aqueous extract of ergot from set A, with the exception that the precipitate was thoroughly washed with alcohol of 50·4 per cent., a quantity of ergotin was obtained which, when calculated for the whole quantity of set A, corresponded to 4,120 grains. Again, comparing this yield with that obtained from the same set by Bonjean's (?) method, set B would have yielded 442·5 grains; set C, 147 grains; making a total of 4,709 grains, or 21·80 per cent. The ergotin obtained by this method could in no way be distinguished from the ergotin obtained by Bonjean's (?) or Carles' methods, except that it was, perhaps, a shade darker when spread in thin layers. It had the same odor and dissolved with equal facility. Deducting ten per cent. for the moisture retained, it represents 4,308 grains of 4,713 grains of total dry extract in the forty-five ounces of ergot. The precipitate, as may be inferred from the yield of ergotin, was very small. As in the other cases, it was thick liquid and brown. The calculated quantity of dry substance represented by this liquid precipitate is 476 grains.

By referring to the foregoing it will be found that M. Bonjean obtained from fourteen to sixteen per cent. of ergotin; M. Carles obtained only from eight to nine per cent.; and the German Pharmacopœia process yields, according to Dr. H. Hager, from fourteen to eighteen per cent. My results do not correspond with any of these figures, since I obtained by the method provisionally adopted as Bonjean's, 11·57 per cent.; by that of Carles, in the manner carried out by me, 11·05 per cent.; and by the process of the German Pharmacopœia, also modified in that the precipitate was washed out with a further quantity of the precipitant, 21·8 per cent. As regards the first two, the yields show that there is practically no difference between Carles' method, employing a stronger alcohol (77·27 per cent.), and the method adopted by me as Bonjean's, employing a weaker alcohol sixty-five per cent.). Nevertheless, there must be a difference between this method, claimed to be Bonjean's, and Bonjean's original method of proceeding, since Bonjean obtained a yield approximating to that

claimed by Dr. H. Hager for the ergotin of the German Pharmacopœia. The greater yield obtained by me, both in carrying out Carles' and the German Pharmacopœia process, is perhaps attributable to the washing of the precipitates with alcohol reduced to the same strength as the liquid from which it first precipitated out; and while it seems to me the most rational method to proceed, it proves that a strict adherence to the prescribed process is necessary to insure uniform and corresponding results. But it shows, at the same time, that there is necessity for a precise formula for the preparation of this as well as other important medicaments.

I have made no chemical investigations of the ergotins prepared by me, considering that after all the determination of their value as medicaments must be made by intelligent physiological experiment. I am inclined to think, from the present knowledge of sclerotic acid and scleromucin, which are now considered the chief active constituents of ergot, that the ergotins obtained by the two first methods contain sclerotic acid only, while the product of the German Pharmacopœia also contains the scleromucin, with, perhaps, more or less inert matter, though there is some reasonable doubt to be entertained on this point, since scleromucin is stated to be insoluble in alcohol of forty-five to fifty per cent. If both are present in that preparation, and their relative activity is the same, the ergotin of the German Pharmacopœia is preferable to that obtained by either of the first-mentioned methods, since it secures the presence of all that is now considered desirable in ergot.

Cucurbita maxima, *Duchesne.*—C. Slop von Cadenberg in Vienna obtained from the seeds, by pressure, 20 to 25 per cent. of a yellowish mild fixed oil of a sweet taste, and found also the following constituents: An aromatic principle, emulsin, gum, sugar, cellulose, chlorophyll and an acid soluble in alcohol and water; neither an alkaloid nor a glucoside could be discovered. The oil proved effective in a number of cases against tænia, 20 grams of it being given, and after four hours 45 grams of castor oil. The parasite was expelled without pain in six or eight hours. The seeds ripened in a warm climate are more effectual than those grown in more northern localities.

The fresh seeds of cucumbers, Cucumis sativus, *Lin.*, which are rich in oil and mucilage, are likewise parasiticidal and tænifuge.—*Phar. Centralhalle,* 1881, p. 261.

PHARMACEUTICAL NOTES.

By Robert F. Fairthorne, Ph.G.

Unguentum Aquæ Rosæ.—The ointment of rose-water of the U. S. Pharmacopœia prepared according to the directions given in that work is, in most respects, justly regarded as a satisfactory preparation. It is not, however, entirely unobjectionable, and the directions can be so modified that those engaged in the manufacture of it will be assisted thereby. The length of time required to produce an ointment such as the apothecary desires is often quite a serious tax upon his patience, and in order to lessen this I would recommend it to be made in the following manner: All the ingredients employed are put into a wide-mouthed bottle, placed in a hot water-bath, and allowed to remain until the solid portion is melted, then the bottle is taken out, and, having tightly corked or stoppered it, the mixture is thoroughly shaken; a uniform emulsion will result, which is to be agitated until solid.

The resulting ointment will be found smoother and more uniform than that produced by stirring, and the operator will find less exertion required, and will have also the advantage of knowing exactly the right moment when it is proper to stop agitation by solidification taking place. If in making it, three times the quantity of the ingredients ordered by the Pharmacopœia are used, an ordinary preserving jar, with a cover that screws on, will be found a very convenient vessel to use.

Cold Cream, and a Cheap Substitute for Oil of Almond.—One of the objections to the rose-water ointment of the Pharmacopœia is its unstable character. It seldom remains in good condition more than two weeks, by which time in many cases it will be found rancid and the rose-water often separated in globules, giving it an unsightly appearance. For these reasons it has been customary amongst the druggists to make a substitute for it, which is called cold cream, either with much less rose-water or without any, or by substituting a small amount of glycerin for it.

The use, however, of oil of sweet almonds has been almost universally retained. This oil is certainly unobjectionable, but can be replaced in making the unofficinal ointment by a much cheaper one, which is sold by the wholesale druggists under the name of nut-oil. This is obtainable at about one-fourth the price of the former, to which it

bears a very close resemblance in color, odor and other characteristics. I have used it and found it quite satisfactory, and offer the following formula to those who would like to try it:

Take of	Nut oil,	½	lb. avoirdupois
	Spermaceti,	3	oz. "
	White wax,	1¾	oz. "
	Rose-water,	½	oz. "
	Oil of rose,	18	drops

Make an ointment in the same manner as suggested above. If a very white cold cream is desired, the addition of 25 grains of borax will produce it.

In this place I would remark that all, or nearly all, the ointments and cerates of the Pharmacopœia can be advantageously made by agitation, and more expeditiously than by the ordinary method.

A Solid Glycerin Preparation.—The very extensive application of glycerin renders it desirable to present it in many different forms, and two very convenient ones will be produced by the following formulas:

Take of	French gelatin,	120	grains
	Glycerin,	1½	fl. oz.
	Water,	½	fl. oz.

Cut up the gelatin in small pieces, and, having added it to the water in a wide-mouthed vial, melt it by means of a water-bath, then add the glycerin, which must be warmed; shake the mixture, pour into moulds, and keep in a cool place until solid. It can then be taken out and wrapped in either tin foil or waxed paper. This makes a clear, elegant, ice-like preparation, and can be applied to the skin, which should be previously moistened with water. If used for toilet purposes a drop of oil of rose can be added whilst the ingredients are fluid.

An article having more resemblance to a cerate or to stick pomade in which glycerin predominates, can be made by taking

French gelatin,	100	grains
Starch,	60	"
Glycerin,	12	fluidrachms
Water,	4	"

Add the gelatin to the water, and proceed as in the other receipt. Rub up the starch with the glycerin, and having heated the mixture on a sand-bath in a capsule, with constant stirring, until it becomes translucent through the starch dissolving, add the solution of gelatin to

it, and pour into moulds. If for toilet purposes, it can be perfumed and moulded of a cylindrical form by pouring it into wide glass tubes closed at the bottom with corks. In order to remove it from them, take out the cork, and, having warmed the tube by pouring a little hot water over it, blow through the tube, when the solidified gelatin will fall out. This is placed on a sheet of glass, and kept cool until the outside has become solid. This can be applied to the skin without previous wetting, and has a singular cerate-like consistence.

Syrups for Soda Water—Orange and Lemon.—Very superior syrups can be made in the following manner: Take the peels of six oranges or lemons; cut them very thin; make a tincture of them by macerating in 6 fluidounces of alcohol for three days. Having filtered it, pour it on 1 pound (avoidupois weight) of sugar contained in an evaporating dish or other suitable vessel, and allow the alcohol to evaporate spontaneously. When dry dissolve in ½ pint of water in which, if orange syrup is to be made, 1½ ounce of citric acid, if lemon, 2 ounces af the acid and 2 drachms, are to be dissolved. This mixture, added to 11 pints of simple syrup, will produce fine flavored syrups, which keep well.

A NEW PROCESS OF PERCOLATION AND A NEW PERCOLATOR.

By Nathan Rosenwasser, Ph.G.

Condensed from a paper read before the Ohio State Pharmaceutical Association, and revised by the author.

The author discusses the choice of the menstruum for its solvent power and for economic reasons; the waste of alcohol in making fluid extracts in the usual manner; the fineness, moistening and proper packing of the powder; the shape of the percolator; the swelling of the powder by absorption of moisture; the variation, caused thereby, in the alcoholic strength of the percolate; and the manner in which the vegetable cells of the powder are deprived of their soluble contents. From these considerations the following deductions are formed:

1st. Percolation through cellular structure should be a succession of macerations proceeding downward, and may be either slow and continuous, or interrupted for short periods, according to circumstances, and then allowing of a greater rapidity of flow.

2d. The fineness of powder must be adjusted to the menstruum, so

as to allow of sufficient resistance to the liquid to prevent its too rapid flow, yet not enough to stop it.

3d. The powder must be packed with greater force toward the top than toward the bottom, in proportion, to cause a more even flow of the liquid.

4th. It should be sufficiently moistened with menstruum before packing to cause an even flow of liquid, and to partially soften or dissolve the material within the cells, so that a more rapid osmosis can take place.

5th. Glycerin is of questionable value as a means of penetrating cells, or in assisting in solution, compared with water and alcohol, since it is not likely to assist osmosis.

6th. The menstruum should be adjusted to the drug, keeping in view the best and cheapest solvent, without wasting alcohol or other expensive menstrua, except when practical results are otherwise unattainable.

Bearing in mind these objects, and knowing what difficulties we have to encounter, let us seek a remedy.

If it is possible to increase the downward pressure of the liquid sufficiently to overcome the lateral pressure of the drug, we obtain a means of percolating without resorting to the necessity of employing a stronger alcohol or reducing the fineness of the powder. Also, as the advantage of percolation is based upon the ability of the liquid to penetrate by absorption the interior of the cell fully or nearly as rapidly as to pass by and around them, one of the tests of merit in conditions must be the ability to reach *the interior* while retarding the flow *between the cells.* A menstruum can reach the interior better when the drug is well packed than when loosely packed, since then each drop will have its attraction of gravitation largely overcome by capillary and osmodic attraction, and must, in a comparative sense, go *through* the cells and *into* them at nearly the same rate as it goes *around* them and *by* them.

It was in endeavoring to solve some of these problems of percolation, more especially the means of overcoming the swelling of the drug, that I have been led to construct the new percolator and process described and illustrated below. How well it is adapted to meet the difficulties we encounter will be easily seen.

I have simply reversed the ordinary percolator, attaching a long tube (rubber usually answers) to the nozzle, and connected it to the

menstruum reservoir, C, Fig. 1, though, of course, a funnel or similar apparatus would answer. Fig. 1 represents the percolator in position, ready for the liquid to flow. Fig. 2 represents the percolator proper, with the open end, E, apart, and ready for packing the drug.

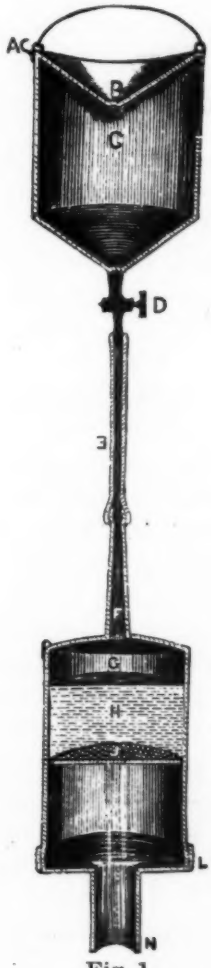


Fig. 1.

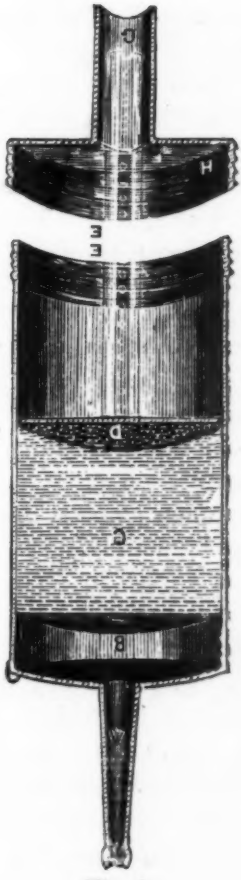


Fig. 2.

THE INVERTED PERCOLATOR.

The porous diaphragm, B, Fig. 2, G, Fig. 1, is first placed in position, the drug is, after previous moistening, packed tightly into the percolator occupying the dotted space, C, Fig. 2, and H, Fig. 1. A porous diaphragm, D, Fig. 2, J, Fig. 1, is placed on the drug and

fastened to the body of the percolator by any simple contrivance. I have it secured by a lock and key, working on an eccentric (not shown in the drawing), which firmly holds the diaphragm in any position made necessary in the cylinder by the varying height of the drug.

The bottom plate, H, Fig. 2, L, Fig. 1, is easily secured to the body of the cylinder, and the bottom or outlet tube is easily closed with a cork or rubber tube and pinch-cock. Now, the percolator having been packed very tightly on the bottom, and less so proceeding upward, the diaphragm holding the drug in place having a piece of muslin or filtering medium placed between it and the drug, we are ready to reverse the percolator, attach it to the menstruum reservoir, C, Fig. 1, by means of the tube E, Fig. 1, and suspend it by the handle of the menstruum reservoir. The percolator is ready, the menstruum is poured into the reservoir, the opening to which is closed with a notched cork, and percolation begins.

Now, as the drug is held in place on all sides, so that it cannot expand beyond its limits, it presses within upon itself, so as in some instances to be almost solid; thus the greatest possible compactness is secured, and, as the height of the column of liquid increases the pressure and velocity of the liquid increases, we have called into play a force that can compete with lateral pressure, no matter how much this may increase by the subsequent swelling of the drug; thus percolation can now go on at the will of the operator, not, as heretofore, at the will of the drug. Instead of being obliged to unpack the percolator and re-pack it more loosely, it is only necessary to increase the height of the tube and reservoir.

On account of the compactness we can give to the drug, and its inability to swell in any direction but upon itself, only a minimum quantity of liquid will be able to lodge between the cells and within them, so that, instead of being able to absorb and retain by capillary and osmodic attraction the usual large amount of menstruum before a drop comes through, the amount absorbed is reduced to a minimum, and with many drugs long before the full quantity of liquid (1 pint for 16 troyounces) is used the liquid begins to drop.

With this percolator, it is easily seen no waste in alcohol or other menstruum occurs, since we can overcome by pressure what heretofore had to be overcome by a liquid occasioning less pressure and of greater limpidity; thus water can be forced through the drug in spite of its expanding the cells.

This brings us to a point of the greatest importance in percolation. A glance at the Pharmacopœia will show that in making fluid extracts, particularly after pouring on the requisite quantity of strongly alcoholic menstruum to make a pint of finished product, a slightly weaker alcoholic menstruum is added to force the first through, the latter being absorbed in the place of the former. This is its object.

With our new percolator this forcing the first liquid through is equally as well accomplished with water. Using an ounce more of menstruum than is desired to be obtained in the finished product to insure against upward diffusion, and, if necessary (according to the swelling to be expected), increasing the height of the reservoir, we can, when the menstruum is all absorbed by pouring in water, collect the full amount of finished product.

We thus obtain a thoroughly reliable fluid extract without the use of a tincture press or still (to reclaim the alcohol absorbed in the drug or evaporated according to the U. S. P.), without more waste than the one additional ounce of menstruum, and without exposing the drug and menstruum to the air during the process. While, of course, some time is needed for proper maceration and for regular and slow percolation, a far greater economy of time is secured than under ordinary circumstances; for, whereas it takes often days and weeks for a percolation as heretofore conducted, by this process, with some drugs, only a few hours, or a day at the most, is needed for practical exhaustion.

With a process of repercolation reduced to a single reserve still less time would be needed to secure the best results.

Such drugs as rhubarb, squill, colombo, dandelion etc., have been percolated with proof spirit, and percolation finished with water, according to the above plan, with excellent results. I have not found it necessary to use a longer tube than one of five feet, including percolator and reservoir, except in working with rhubarb and squill, when a tube eight feet long answerd very well.

The new process of cold percolation for making syrups, for filtering large quantities of liquids, such as oils, elixirs, syrups, etc., works well with this percolator. In making tinctures this process results in rapid work and economy.

One feature noticeable, also, is the absence of evaporation from the surface by this method of percolation. In percolating on a large scale the economy of time and material is even more apparent when, after each percolation, it is necessary to empty the percolator of its contents

and pack it loosely into another larger one, to wash out the alcohol with water, and then recover the alcohol by redistillation. Here this occurs in *one* operation, and the drug, which often becomes partly decomposed, and is exposed to the air during the time it is washed with water, has the water reach it from a closed end, and never gives rise to foul gases, etc., while only the fluid extract, or that and the proper amount of reserve, need be collected, leaving no alcohol to speak of in the dregs.

273 *Woodland Avenue, Cleveland, O.*

GLEANINGS IN MATERIA MEDICA.

BY THE EDITOR.

Fucus amylaceus has been analyzed by H. Greenish, who found it to be free from mannit and glucose, but to contain not less than seven carbohydrates, all of which yield sugar when boiled with dilute mineral acids. These carbohydrates are: 1. mucilage, soluble in cold water; 2. jelly-like substance, soluble in hot water, colorless; 3. starch, colored blue by iodine and converted into sugar by diastase; 4. a parabin-like substance, dissolved by very dilute hydrochloric acid and precipitated by alcohol; 5. metarabin, extracted by dilute caustic soda and precipitated by alcohol; 6. wood gum, extracted by 10 per cent. solution of potassa and precipitated by tannin; 7. cellulose, contained in the residue.—*Phar. Zeitschr. f. Russl.*, July 19, pp. 501–507.

Volatile Oil of Mustard, adulterated with carbon bisulphide, has been noticed before (see this journal, 1880, p. 547, 580). E. Johanson has examined six samples of the oil by carefully distilling a portion at a temperature not exceeding 80°C. and mixing the distillate with sulphuric acid, when the carbon bisulphide rose to the surface; the quantities obtained were 1·5, 2·0, 0·76, 14·1, 1·85 and 1·4 per cent. by weight. The specific gravity of this liquid, 1·2534, corresponded with that of carbon bisulphide; boiled with alcohol and ammonia, a liquid was obtained giving with ferric chloride the reaction of sulphocyanide; treated with alcoholic potassa, then acidulated with acetic acid and tested with copper sulphate, yellow precipitates of copper xanthogenate were obtained. The residue left in the retort after fractional distillation had the density 1·0195, agreeing with that of pure oil of mustard. This volatile oil naturally contains carbon sulphide, which, however, according to Prof. A. Hofmann, does not exceed 0·56 per cent.—*Phar. Zeitschr. f. Russl.*, July 26, p. 517–527.

Volatile Oil of Linaloes or *Licari Kanali*, the white cedar of Cayenne, is a pale-colored limpid liquid, of an agreeable odor resembling rose and lemon, and burning with a sooty flame. Distilled over calcium chloride, H. Morin found it to have the density 0·868 and to boil at 198°C. It is levogyre, soluble in alcohol, ether and glycerin, reacts violently with bromine, iodine and nitric acid, and forms with hydrochloric acid gas a thick liquid having a camphor-like odor. Its composition is $C_{10}H_{18}O$, and when treated with fused zinc chloride it yields a hydrocarbon, $C_{10}H_{16}$, having a turpentine-like odor.—*Compt. rend.*, xcii, p. 998.

Reactions of Thymol.—Hammarsten and Robbert give as the most delicate reaction of thymol its behavior to glacial acetic acid and sulphuric acid. The liquid is mixed with half its volume of glacial acetic acid and then with not less than an equal volume of sulphuric acid. On warming the mixture a beautiful reddish-violet color is produced, which is very permanent and not destroyed by an excess of acid or by boiling. It is plainly observed in dilutions of 1 : 1,000,000; presence of compounds, which by the acid are colored yellow or brown, should be avoided.

Thymol is readily dissolved from its solution in 100,000 of water, by agitation with ether, particularly after the addition of a few drops of hydrochloric acid. But normal urine contains a substance which yields a product of similar reaction on the treatment indicated. On distilling the urine without the addition of acid the above color reaction is not obtained after 0·1 to 0·2 gram thymol had been taken internally. However, one-millionth of thymol added to the urine may be easily detected.

Compared with the ordinary phenol reactions, the following differences are observed:

1. Ferric chloride—phenol, blueish-violet color; thymol, no action.
2. Sodium hypochlorite and anilin—blue color with phenol and thymol.
3. Sodium hypochlorite and ammonia—phenol, blue color; thymol, green color changing to blue-green, and after 4 days to red.
4. Millon's reagent—phenol, red color, permanent on boiling; thymol, reddish-violet color, disappears on boiling.
5. Bromine water—phenol, crystalline precipitate; thymol, turbidity.

Phenol may be detected in mixtures with thymol by ferric chloride and by bromine water.—*Phar. Ztg.*, Aug. 31; *Upsala Läkaref ö.*, xvi, p. 630.

PRACTICAL NOTES FROM FOREIGN JOURNALS.

BY THE EDITOR.

Chlorine Water.—Berthelot determined the solubility of chlorine to be at 12°C. 4 grams of the gas in 1 liter of water; by long continued action 6 grams of chlorine may be dissolved in consequence of the gradual formation of oxy-acids of chlorine.

Concentrated solutions of metallic chlorides dissolve much less chlorine than pure water, but the solubility increases with dilution.

Strong hydrochloric acid dissolves a much larger amount of chlorine to an orange colored liquid, with the formation of a hydrogen perchloride, probably of the formula HCl_3.—*Ann. Chim. Phys.*

Sodium bicarbonate, containing ammonium bicarbonate, is occasionally met with, if prepared from soda obtained by the ammonia process. Should it contain more than traces of the ammonium salt, a layer of it, 2 or 3 centimeters (1 inch) broad, and 0·5 cm. ($\frac{1}{15}$ inch) thick will cause white vapors to appear, if a glass rod moistened with concentrated acetic acid, or with 12·5 per cent. hydrochloric acid, be held near the surface of the powder. For the detection of traces of the ammonium salt, about 2 grams of the powder is heated in a rather long test tube; the vapor evolved is tested with a glass rod as above.—*Ph. Centralhalle*, 1881, p. 342.

Fowler's Solution.—Dannenberg does not regard the algaceous growth, occasionally observed in this liquid, as being of any importance concerning the arsenic present; but he directs attention to the gradual oxidation, in partly filled bottles, of the arsenious to arsenic acid, as was shown by Fresenius many years ago. According to Frerichs and Wœhler arsenic acid is far less poisonous than arsenious acid, and it is obvious that it cannot be immaterial which of the two compounds is present. Fowler's solution should be prepared only in small quantities and preserved in well stopped vials.—*Phar. Centralhalle*, 1881, p. 319.

Preparation of Sodium Ethylate.—Hager gives the following directions: 100 grams absolute alcohol are placed into a glass flask of 350 ccm. (about 12 oz.) capacity; small pieces of the metallic sodium of the size of a pea or bean are then gradually added, and the flask is closed with a cork, through which a long open glass tube passes for the purpose of condensing the alcoholic vapors evolved during the reaction. The addition of sodium is continued, until 12 grams of the metal have been used, repeated agitation being required towards the end of

the process. The hot thickish liquid is now poured into a porcelain dish, the flask is rinsed out with a little hot alcohol, any undissolved sodium is carefully removed, and the liquid is heated until, after cooling, it will completely solidify, when the mass is rubbed into a fine powder and carefully preserved. Thus prepared it contains some alcohol in combination, which may be expelled by heating it to 200°C. In contact with water it is decomposed into alcohol and sodium hydrate. Its action is milder than that of caustic soda, and it is more conveniently applied than the latter. Richardson's sodium ethylate is a clear solution of 1 part of the above compound in 3 parts of absolute alcohol. Freshly prepared it is colorless; but brown yellow if made from old ethylate.—*Ibid.*, p. 359.

Deodorization of Alcohol.—According to L. Naudin and J. Schneider, the disagreeable odor and taste of alcohol, due to foreign admixtures, may be removed by generating hydrogen in the liquid either from iron or zinc by hydrochloric or sulphuric acid; or from potassium or sodium or their amalgams; or from contact with the metallic couples zinc and copper, iron and copper, zinc and lead, iron and lead, or zinc and mercury.—*Chem. Zeitung.*

Preparation of Pure Phenol.—W. Alexejeff recommends adding to the commercial carbolic acid 5 per cent. of water, melting the mixture and setting aside to crystallize. The crystals are well drained and the operation is repeated two or three times, when the final product is distilled.

The author has been unable to prepare the hydrate, $2PhHO+H_2O$, which Calvert stated to be obtained from a mixture of 4 parts of phenol and one part of water at a temperature less than 4°C. and to melt at 16°C. Left in contact with an excess of water for several months, the author obtained crystals melting at 37°C.—*Bull. Soc. Chem.*, 2, xxxv, 379.

Modified Test for Sugar.—Boettger's test (bismuth subnitrate and sodium carbonate) is modified by L. Dudley as follows: the bismuth salt is dissolved in as little pure nitric acid as possible, the solution mixed with an equal volume of acetic acid and diluted with 8 or 10 volumes of water. The solution keeps well, may be still further diluted without becoming turbid, and is used by adding 1 or 2 drops of it to the urine rendered strongly alkaline by soda, and by boiling the mixture for 20 or 30 seconds; in the presence of sugar the white precipitate will acquire a gray or black color.—*Zeitschr. Anal. Chem.*, xx, 117.

PREPARATION OF NEUTRAL OXALATE OF POTASSIUM.

BY E. B. SHUTTLEWORTH.

The rapid dry-plate processes in photography, which are at present exciting considerable attention among the more advanced classes of those engaged in the art, have created a demand for neutral potassium oxalate that cannot be supplied through the ordinary trade channels. The writer has frequently been asked for this salt, as doubtless have many of the readers of the Journal, and as the preparation is simple, involving no special apparatus, a few notes on the subject may prove opportune.

There are three oxalates of potassium known to chemists—the *neutral* salt to which this paper refers, and which contains two atoms of potassium to one molecule of acid; the *binoxalate*, the ordinary *salt of sorrel* of the drug stores, and that which is found in many plants, containing one atom of potassium to one of acid; and the *quadroxalate*, a salt not frequently prepared or used, in which the proportion of potassium and acid are as 1 to 2.

The neutral salt is the only one used in photography. It crystallizes in rhombic prisms, is stable in the air, contains two molecules of water of crystallization which may be driven off by heat, and is soluble in about three times its weight of cold water.

It is evident that the easiest mode of preparing this salt is by neutralizing a solution of carbonate of potassium by oxalic acid. Some have recommended that the ordinary salt of sorrel, *sal acetosellæ*, be rendered neutral by the addition of the carbonate, but this is certainly a roundabout and expensive plan, not only as involving the use of more costly material, but unnecessary evaporation. The most expeditious method will be found to be as follows:

Dissolve a quantity—say one pound—of carbonate of patassium in an equal weight of cold water, decanting the clear solution from any undissolved sediment, if such should remain. This residue consists of potassium sulphate or silicate, and is commonly present in the ordinary salts of tartar of commerce. Put the clear solution into an enameled iron, porcelain, or wedgwood dish, add a quantity of water equal to that first employed, and heat to the boiling point. Add carefully, and by small portions, avoiding mishap by effervescence, sufficient powdered oxalic acid to neutralize the carbonate, testing carefully towards the close with test paper. If necessary filter the solution

while hot, and set aside to crystallize. A fresh crop of crystals may of course be obtained by evaporating the mother liquor.

The quantity of oxalic acid required cannot be definitely stated, as both acid and carbonate are generally impure; but, theoretically, 174 parts of carbonate should require 90 of acid, and produce 202 of neutral oxalate. The product will practically be always considerably less than this, seldom equaling more than the weight of the carbonate employed.

As has been stated, the neutral oxalate is soluble in about three times its weight of water, and as photographers use a saturated solution, there is no reason, if time be an object, why a liquor should not be prepared extemporaneously, or at least that the operation of crystallization might not be omitted.

I have found that the specific gravity of such a solution is at ordinary temperatures 1·220, and that ten ounces of the salt, when dissolved, measure twenty-six fluidounces. Such a solution, except made with distilled water, will of course require filtering, as the lime present in ordinary water is precipitated as oxalate.—*Canad. Pharm. Jour.*, Aug., 1881.

VARIETIES.

TREATMENT OF RINGWORM OF THE HEAD.—Dr. Besnier recommends the following:

℞	Acidi boracici,	gr. xv
	Sulphur. sublimat.,	gr. xv
	Vaselini,	℥i

GLYCEROLE OF THYMOL.—

℞	Thymol,	1·0
	Glycerin,	25·0
	Alcohol,	25·0
	Water, enough to make	500·0

M.—Useful in pityriasis.

SIMPLE REMEDY FOR CHAFE.—Bathe parts well in tepid water, dry well with soft cloths, and apply, by means of a soft sponge or cloth, the following:

℞	Zinci acetatis,	gr. xv
	Morphiæ acetatis,	gr. ii
	Glycerin, aq. rosæ,	*aa* ℥ii

M. ft. sol. Sig.—Apply to chafed parts twice or thrice a day.

STYPTIC COLLOID.—℞ Collodion, 100·0; carbolic acid, 10·0; tannic acid, 5·0; benzoic acid, 5·0. Mix the ingredients in the above order. It instantly

coagulates blood, forming a consistent clot, under which wounds will readily heal.

CURE FOR RINGWORM (Morris).—℞ Thymol, 0·5 to 1·0; chloroform, 4·0; olive oil, 12·0. M. The thymol destroys the fungus, the oil prevents irritation and rapid evaporation, while the chloroform facilitates the absorption of the active ingredient by acting on the sebaceous glands.—*Phil. Med. Times*, Aug. 27.

NAPHTHOL IN SCABIES.—Prof. Kaposi uses:

℞	Naphtholi,	15 parts	
	Axungiæ,	100	
	Saponis virid.,	50	
	Cretæ præcip.,	10	M.

It is said to cure rapidly, both the scabies and the consecutive eczema.—*Med. and Surg. Rep.*

NAPHTHOL is a new remedy recently remommended by Kaposi, of Vienna, for psoriasis. It is a product of tar, possessing healing virtues equal to chrysophanic acid, and, at the same time, being colorless and odorless, is strongly to be recommended. It also resembles chrysophanic acid in that it possesses toxic properties. A cumulative effect is to be feared when it is profusely used on large areas of psoriasis, which absorb with avidity. No unusual precautions are, however, demanded if the urine be regularly examined. Naphthol has also been recommended by Neisser for scabies, prurigo and kindred skin affections.—*Atlantic Med. Register*, Oct., 1881, p. 26.

THYMOL has been used by C. Bozzolo in 2·10 grm. = gr. xxx as an efficient vermicide.—*Ibid.*

ELASTIC ADHESIVE PLASTER.—Dr. W. P. Morgan, in a communication to the Boston "Med. and Surg. Jour.," states that he has been trying to obtain an elastic adhesive plaster that, when attached to the skin, should yield to the movement of the muscles and parts beneath without the sensation of stiffness or an uncomfortable wrinkling. Not being able to obtain an article of this description he procured some India rubber, and, giving it a coat of plaster such as is recommended in Griffith's Formulary under the name of Boynton's Adhesive Plaster (lead plaster 1 lb., rosin 6 drachms), he found the material he wished. After using it as a simple covering for cases of psoriasis, intertrigo, etc., he extended its use to incised wounds, abscesses, etc., and found it invaluable.

Placing one end of the strip of plaster upon one lip of the wound, and then stretching the rubber and fastening the other end to the opposite lip of the wound there is perfect apposition of the several parts, the elastic rubber acting continually to draw and keep the parts together. When unable to get the sheets of rubber one may use broad letter-bands (sold by stationers), by giving them a coat of plaster.—*Ohio Med. Journ.*, 1881, Sept., p. 136.

LEMON JUICE IN DIPHTHERIA.—Dr. J. R. Page, of Baltimore, in the New York "Medical Record," May 7th, 1881, invites the attention of the profession to the topical use of fresh lemon juice as a most efficient means for the removal of membrane from the throat, tonsils, etc., in diphtheria. In his hands (and he has heard several of his professional brethren say the same) it has proved by far the best agent he has yet tried for the purpose. He applies the juice of the lemon, by means of a camel's hair probang, to the affected parts every two or three hours, and in eighteen cases in which he has used it the effect has been all he could wish.—*Med. and Surg. Rep.*

CANNABIS INDICA IN MIGRAINE.—What the bromides and belladonna are to epilepsy, cannabis indica is to migraine. The principle of treatment laid down is to maintain, by the use of small doses of the agent, a constant influence upon the nervous system for a long time, the same as is required in epilepsy by the use of the bromides. At first, as a matter of course, no appreciable effect is observed, and not until the use of the remedy is persevered in for many weeks, and the nervous system kept under its influence for a considerable time, will the patient find an appreciable diminution in the severity and frequency of the attacks. It is well to commence with one-fourth grain of the extract, before each meal, for the first fortnight; the dose may be increased to the third of a grain for the second fortnight, to be augmented to a half grain at the end of four weeks. This amount will generally be sufficient, and should be faithfully continued for several months. Success here is only obtained by persevering effort.—*Chicago Med. Jour. and Exam.*, from *Ohio Med. Jour.*, Sept.

CURE OF GOITER BY HYDROFLUORIC ACID.—Dr. Edward Woakes gives, in the "Lancet," a detailed account of a number of cases of goiter cured by fluoric (hydrofluoric?) acid internally. He begins treatment with 15 minims of a one-half per cent. dilution of the acid, three times a day, and, if necessary, increases the dose to 20, 30, 40, or even 70 minims, and extends the time to several months. His results are quite remarkable, even in cases that had resisted iodine, bromine, iron, etc. In a few it was conjoined with injections of tincture iodine. Very few failed to be reasonably benefitted, and in 85 per cent. the cure was decided.—*Independent Practitioner*, from *South. Med. Record*, 1881, p. 310.

THE DISINFECTING POTENCY OF CARBOLIC ACID.—The amount of pure acid required to destroy the vitality of bacteria (10 grains, experiment No. 42) is equal to about 17 pounds in a room 12 feet square and 12 feet high (capacity 1,728 cubic feet), and to fulfill the conditions of the experiment in disinfecting on a large scale it would be necessary to scatter this amount over the floor of a room having these dimensions, and to suspend articles to be disinfected near the floor for at least six hours, care being taken that all apertures were closed so that the fumes of the acid might not escape. Experiment No. 43 shows that four times this amount (68 pounds) of "crude" acid placed upon the floor of a room of the same dimensions

would not destroy the vitality of bacteria exposed in the room for six hours. Experiment No. 24 shows that an amount of the impure acid equal to 46 fluidounces volatilized in the same room will not destroy the potency of vaccine virus in a moist state (rubbed up with glycerin) when the time of exposure is 12 hours. Finally, these experiments show that the popular idea, shared, perhaps, by some physicians, that an odor of carbolic acid in the sick-room, or in a foul privy, is evidence that the place is disinfected, is entirely fallacious, and, in fact, that the use of this agent as a volatile disinfectant is impracticable, because of the expense of the pure acid and the enormous quantity required to produce the desired result.—Sternberg, *National Health Bulletin*, July 13; *Cinc. Lanc. and Clinic.*, 1881, p. 201.

A NEW ANTISEPTIC.—Dr. C. F. Kingzett (London "Lancet") claims that the product obtained by forcing air through oil of turpentine during a period of from one to two hundred hours, has an antiseptic quality superior to any hitherto known. The oil of turpentine so treated loses its volatile character, and, although not soluble in water, it forms in contact with this, or any moist surface, strongly antiseptic principles.—*Chic. Med. Rev.*, Sept. 5.

SKUNK PERFUME AS AN ANÆSTHETIC.—Dr. W. B. Conway ("Virginia Medical Monthly," Aug., 1881) reports a case where roguish school boys caused one of their number to inhale from a two-ounce phial an unknown quantity of skunk perfume. The effects produced were total unconsciousness, muscular relaxation, a temperature of 94° and pulse of 65, together with cool extremities. The respiration and pupils were normal. The patient soon recovered under hot pediluvia and stimulants. The skunk perfume is rather an unpleasant substance to experiment with, still those endowed with anosmia might obtain results of value from similar experiments with it.—*Chic. Med. Review.*

CONVALLARIA MAJALIS.—Clinical and physiological experiments with this herb are reported ("Centralblatt für Klinische Medicin," No. 1, 1881) by Drs. Bojojawlensky and Troitzky. In organic cardiac disease its effects were found equal to those of digitalis; the urine was increased; serous exudations were rapidly absorbed; nervous excitability was diminished. Cumulative effects were not observed.—*Chic. Med. Review*, Sept. 5.

MINUTES OF THE COLLEGE.

PHILADELPHIA, September 26th, 1881.

The semi-annual meeting of the Philadelphia College of Pharmacy was held this day at the College Hall, 13 members in attendance.

President Dillwyn Parrish, on taking the chair, read the following minute:

"The Constitution of our College provides that a meeting should be held

this day for the purpose of electing Trustees and transacting other business connected with its interests, and in accordance with this provision we have been called together by our Secretary.

"Never in the history of the College have we met under circumstances so deeply affecting. For the second time, within the memory of us all, the President of the United States has been stricken down by the bullet of an assassin. Only six months ago President Garfield took his seat in our national capital, the acknowledged and trusted leader of the government.

"During the short period of his administration, his intimate acquaintance with the interests of the country, his incorruptible integrity and wise statesmanship secured the confidence of the people in a marked degree, and since his attempted assassination, his patience and heroic Christian spirit under the most painful suffering has endeared him not only to the hearts of his countrymen, but to the civilized world. It has therefore been deemed proper by our new President, the Governor of our State and the Mayor of our City to recommend that all business be suspended on this, the day of his funeral, and that while the citizens of this great country bow to this dispensation of Divine Providence, their hearts may ponder upon the lesson which the sad event teaches.

"I think I anticipate the feelings of the members of the College when I suggest that we adjourn without transacting the business for which we have been called together."

Mr. Bullock, in a few appropriate remarks, coincided with the minute, and suggested a motion for adjournment.

Mr. Wiegand then moved that the meeting adjourn, to assemble again for the transaction of business on Monday, October 3d, at the usual hour, which was unanimously agreed to.

OCTOBER 3d, 1881.

The meeting assembled agreeably to adjournment, Charles Bullock, First Vice President, in the chair, 18 members present.

The minutes of the meetings in June and September were read and, on motion, adopted.

The minutes of the Board of Trustees for July, August and September were read by Mr. Bakes, Secretary of the Board, and, on motion, approved.

Mr. Bakes, chairman of the committee to make arrangements for a reception of the members of the College and of others interested in its behalf, on the evening of September 27th, reported that upon that evening about two hundred persons were in attendance. The entertainment was a success, and appeared to be enjoyed by all present, notwithstanding the extreme heat which prevailed. Speeches were made by Mr. Bullock, Dr. Turnbull (a graduate of the College of 1842), Drs. Bridges and W. B. Atkinson, and Professors Maisch, Remington and Sadtler.

The following telegrams were received from Governor Hoyt and the New York College of Pharmacy:

"*Harrisburg*, September 27th, 1881.

"To PRESIDENT OF PHILADELPHIA COLLEGE OF PHARMACY,
"145 N. Tenth street, Philadelphia.

"My engagements are such that I regret my inability to attend reception this evening. HENRY M. HOYT."

"*New York*, September 27th, 1881.

"PROF. JOHN M. MAISCH, 145 N. Tenth street, Philadelphia.

"The officers and faculty of the College of Pharmacy of the City of New York, in their own behalf and in behalf of the members of the College, send greeting and best wishes to their sister institution.

"EWEN MCINTYRE, *President.*"

Professor Remington, chairman of the delegation to attend the annual meeting of the American Pharmaceutical Association, held at Kansas City, Mo., stated that all the delegates appointed by the College were in attendance, and that after the adjournment of the meeting, which was held during intensely warm weather, the Eastern delegates divided into two companies, one of which took a trip to Santa Fé, and the other to the Rocky Mountains, visiting the gold and silver mines of Colorado, Gray's Peak, etc. He spoke warmly of the kindness extended to all by the people of Kansas City.

His report, which follows, was, on motion, accepted:

"*To the Philadelphia College of Pharmacy:*

"GENTLEMEN—The undersigned delegates to the American Pharmaceutical Association respectfully report that they attended the meeting held in Kansas City on the third Tuesday in August, 1881.

"The meeting was largely attended, considering that the place selected was in the Far West. Some of the papers read at the meeting were of lasting value, and more time was afforded to the discussion of the scientific papers than has heretofore been the case, owing to the relief given by the Council, all business matters having to come before this body under the new by-laws. It was a source of regret that President Shinn could not be present; his place was filled by Mr. Schafer, of Iowa. Prof. P. W. Bedford, of New York, was chosen President for the ensuing year.

"The Association adjourned to meet in September, 1882, at Niagara Falls, N. Y.

"Respectfully submitted.

"Signed, JOSEPH P. REMINGTON,
JOS. L. LEMBERGER,
CHAS. A. HEINITSH,
CHAS. BULLOCK,
GEO. W. KENNEDY."

Professor Maisch, in behalf of the delegation to attend the Conference of the Schools of Pharmacy, made the following report:

"*To the Philadelphia College of Pharmacy:*

"The undersigned delegates respectfully report that they have attended the Twelfth Conference of Schools of Pharmacy, which met in Kansas City, Mo., August 23. Delegations from the Cincinnati, Louisville, Maryland, Massachusetts, New York, Philadelphia and St. Louis Colleges of Pharmacy were present.

"The subject selected last year for consideration was the advisability of discontinuing the writing of a thesis as one of the requirements for graduation. With one or two exceptions all the delegates present expressed themselves in favor of continuing the thesis and of rating it in the final examination; but the opinions differed as to whether the rating should be in the same manner as the other branches, or whether it should be rated only for determining the relative standing of those students who pass the final examination. A resolution was finally adopted simply recommending that the thesis of each student be rated in the final examination.

"After some further discussion the following two subjects were referred to the consideration of the various colleges, to be reported on at the next annual Conference:

"1. That measures be adopted towards making a course in analytical chemistry obligatory; and

"2. That an examination in this branch be required before the granting of the degree.

"Respectfully submitted. JOHN M. MAISCH,
CHAS. BULLOCK,
JOSEPH P. REMINGTON."

The report was, on motion, accepted, and referred to the Board of Trustees for their consideration.

An election was then ordered for Trustees and a Committee on Deceased Members.

The chair appointed Messrs. John E. Cook and Alonzo Robbins tellers, who, upon counting the vote, announced the following gentlemen elected:

TRUSTEES FOR THREE YEARS.

Dr. Adolph W. Miller, Albert P. Brown, William B. Thompson.

Trustee to fill the unexpired term of Dr. Wilson H. Pile, deceased.

William E. Krewson.

COMMITTEE ON DECEASED MEMBERS.

Charles Bullock, Joseph P. Remington, Alfred B. Taylor.

Then, on motion, adjourned. WILLIAM J. JENKS, *Secretary.*

MINUTES OF THE PHARMACEUTICAL MEETING.

PHILADELPHIA, October 18, 1881.

In the absence of the President, Mr. Alonzo Robbins was called to the chair. This being the first of this season's meetings, an election for Registrar was held; T. S. Wiegand, being nominated, was elected. The minutes of the last meeting were read and approved. Mr. Robbins stated that a mistake had been made in the minutes as published on page 311 of the May number, in reference to the menstruum used for *fluid extract of guarana*, which should be two parts of alcohol and one of water.

A. P. Brown presented a copy of the "Proceedings of the New Jersey State Pharmaceutical Association"; also an *adjustable pill finisher*, which consists of a disk, of about 3 inches diameter, with a rim on which a screw is cut, and a ring on which a screw is cut with a similar thread, so that the edge of the ring can be raised or lowered, and the pills finished by rolling them with a spatula. The neat manner in which the apparatus was made and its adaptability elicited general approval.

A copy of Baumé's "Traité de Pharmacie" and three volumes of the "Traité de Chimie Experimentale et Raisonné," by Mr. Baumé, were sent by the Rev. John Greyson, of La Porte, Pa., formerly a student of pharmacy in this college, as a donation to the library from the late Mr. E. S. J. Meilly, of Bath, Me.

The report of the Commissioner of Education for 1879 and also a copy of the report of the Smithsonian Institution were received; they were accepted with thanks.

A copy of the "Proceedings of the Pennsylvania State Pharmaceutical Association" was presented by Prof. Maisch, on behalf of the Secretary of the association.

A vial of the Eau Medicinal d'Husson, from the store of the late Elias Durand, and now over thirty years old, was presented by Dr. B. H. Rand. It is a wine of colchicum.

Dr. L. Wolff read a paper upon *oleates and oleo-palmitates* (see p. 443), which elicited considerable discussion. The author expressed great satisfaction with the results of the method described in his paper. In this connection Prof. Maisch exhibited a sample of *ointment of nitrate of mercury*, prepared in such a way as not to become discolored by an iron spatula. The method, however, was not communicated, although it has been promised.

Mr. Sayre stated that he had tried various substances, and found stearic acid to give a very good ointment, but it was too stiff; as yet a really satisfactory formula was a desideratum.

Dr. Wolff stated that if oleic acid was treated with nitrous acid it would not congeal into elaïdin unless palmitic acid was present. Prof. Maisch thought that, if it could be inferred by this observation that oleic acid was not altered by the action of nitrous acid, then a purer oleic acid should be obtained by expressing the solidified mass; and a purer olein, by expressing the oils of almond or olive, solidified by the same agency. Gottlieb, who is said by Gmelin to have been the only chemist who experimented with pure oleic acid, states that with hyponitrous acid oleic acid is converted into elaidic acid, and that no other product is formed.

The question of a reliable method of *testing pepsin* was mentioned at the last meeting as being very desirable.

Mr. Sayre stated that albumen or fibrin from bullock's blood, freshly obtained, when dissolved by solution of pepsin, and evaporated, yielded a bitter product. A carefully prepared paper upon this subject would be valuable.

Prof. Maisch stated that all experiments for comparison should be made under circumstances perfectly similar; for it was well known that the same quantity of pepsin, if dissolved in different quantities of liquid, would dissolve in a given time more albumen or fibrin in the concentrated than in the weaker solution; the length of time that the solution was permitted to act upon the albumen also must be similar.

It was queried what the value of pepsin in a physiological point of view was. Some medical men regard it as a most valuable medicine, and consider its usefulness as but partially developed. The most valuable material to be used as a diluent was also discussed somewhat, and it was thought by some of the members that sugar of milk was not the best for that purpose.

The method of *preparing the aromatic waters*, by mixing the volatile oil with hot water, and shaking at intervals till cold, was commented upon. Glass flasks are liable to be broken during the operation, and the vexation which results from the use of a tin can, and from keeping the canister tightly closed, was exhibited by a collapsed can, the compression being caused by atmospheric pressure.

There being no further business, the meeting adjourned.

T. S. WIEGAND, *Registrar.*

PHARMACEUTICAL COLLEGES AND ASSOCIATIONS.

THE COLLEGES OF PHARMACY have opened their annual course of instruction during the last week of September and in the beginning of October. As far as heard from, the attendance during the present year shows an increase; thus at the Philadelphia College of Pharmacy 218 students have matriculated for the junior course. It is gratifying to note that the importance of laboratory instruction is being appreciated more fully every year. Several colleges have made such a course obligatory upon its students, and the subject will be thoroughly discussed by the different colleges, and next year by the conference of schools of pharmacy. Both the chemical and pharmaceutical laboratories of the Philadelphia College are well filled with students, and the increased facilities, provided during the past summer, have been proved to have been made in good time.

The St. Louis College of Pharmacy has already taken action upon the thesis to be presented by each applicant for graduation, and these essays will hereafter be rated in the final examination.

The faculties at the different colleges of pharmacy remain as heretofore, with the exception of the Louisville College of Pharmacy, where Professor Diehl has resigned the chair of pharmacy, in consequence of other duties requiring his attention, and Prof. V. Davis has been elected to fill the vacancy. The withdrawal of Prof. Maisch from the superintendency of the chemical laboratory of the Philadelphia College of Pharmacy, and the appointment of Professor Fred. B. Power, has been noticed before.

CINCINNATI COLLEGE OF PHARMACY.—At the meeting held Wednesday, Aug. 10th, the following members were duly elected to serve for the ensuing term in the Board of Trustees: Jno. Weyer, Jas. H. Feemster, Julius Greyer and Louis Klayer.

Prof. E. S. Wayne read a long and interesting paper (accompanied with illustrations of the works) upon *Salt and Bromine Manufacture* in the vicinity of Pomeroy, Ohio, and at Mason City, W. Va.; also describing the geological formation from which the brines yielding salt and bromine are obtained. The manufacturing of salt at the points was stated to be equal to that of the New York Salt Works in quantity, and the annual yield of bromine about 250,000 pounds, a large portion of which finds a market in Europe, the rest being used by manufacturing chemists in the United States in the production of potassium bromide. The brines of the Ohio Valley are much richer in bromine than those of Saginaw, Mich., and those of New York, and this fact makes the Ohio Valley the locality from which bromine can be profitably and cheaply obtained.

Prof. Wayne also read a paper upon the *Cathartic Principle of Castor Oil.* From experiments made upon the oil itself, and upon the cake left after pressing, it appears that the superior cathartic effect of beans and the pressed cake is due to an acid body, only slightly soluble in the neutral oil and readily separated from it in alcoholic solution by the addition of an

alcoholic solution of plumbic acetate. The same acid existing in the beans and cake in larger quantities accounts for their excessive cathartic action.

Mr. Jno. Weyer presented the college with a splendid specimen of Lake Superior copper ore, in which native copper and oxides of copper were blended.

THE NEW HAMPSHIRE PHARMACEUTICAL ASSOCIATION held its eighth annual meeting at the Eagle Hotel, Concord, Oct. 11th. There was a fair attendance, and two sessions were held. The meeting was opened by the President, Rob. C. Dickey, of Hillsborough Bridge, and the following officers were elected for the ensuing year:

President, Charles A. Tufts, Dover. Vice Presidents—Parker J. Noyes, Lancaster; Stephen F. Sanders, Rochester. Secretary, George F. Underhill, Concord. Treasurer, Henry B. Foster, Concord. Executive Committee—Robert C. Dickey, Hillsborough; Charles A. Merrill, Exeter. Auditor, Edward A. Brockway, Franklin. Reporter of Progress of Pharmacy, W. P. Underhill, Concord.

Standing committees and delegates to various pharmaceutical associations were likewise elected. No further account of the transactions has been received.

ILLINOIS STATE PHARMACEUTICAL ASSOCIATION.—The second annual meeting convened at the Opera House, Peoria, Tuesday, Oct. 18, the main floor being used for the meeting and for the pharmaceutical exhibition. The President, W. N. Marmon, of Bloomington, presided. The report of the Executive Committee stated the membership to be 473, to which number numerous additions were made. The association was cordially welcomed by Mayor Warner. The President in his annual address submitted several propositions tending to increase the efficiency of the association and the interest in its annual meetings. The Treasurer reported a balance on hand amounting to $303.48. The report of the State Board of Pharmacy gave information about its organization and the work accomplished since July last; also that, at a meeting of the State Boards held at Kansas City, it was found that, owing to the want of uniformity in pharmacy laws, no united course of action could be taken at present, and upon the question of the mutual recognition of licentiates in pharmacy by the various boards no general consent could be obtained. The Board of Pharmacy have, therefore, resolved to decline, for the present, to register licentiates in pharmacy from other boards without examination.

The registrations under the law amount to 3,791, of which number 2,708 are registered as pharmacists and 1,083 as assistant pharmacists. Of the former about 300 are graduates in medicine, 127 are graduates in pharmacy and 19 passed the board's examination. Of the assistant pharmacists 609 are entitled under the law to engage in business on their own account, after taking out the certificate of registered pharmacist, without examination. The receipts of the Board were $6,656; the balance on hand, after deducting expenses, was $3,971.45.

On the second day, Oct. 19, Mr. G. P. Engelhard read the report of the

Legislative Committee, giving an account of the steps taken for securing the passage of the pharmacy law, after which the following officers were elected:

President, F. C. Bourscheidt, Peoria. Vice Presidents—William Bower, Olney; A. A. Brown, Sterling; J. P. Henry, Arcola. Secretary, Mat. W. Borland, Chicago. Treasurer, A. P. Cunningham, Champaign.

In recognition of his services, the association ordered a portrait engraving of its first President, W. W. Marmon, for the Proceedings in 1882.

Chicago was selected for holding the next annual meeting on the second Tuesday in October, 1882, and W. M. Dale was appointed Local Secretary.

Reports from the Committees on Drug Trade, on the President's Address, on Queries and on a Contested Membership were read and considered. Various amounts of money were appropriated. Mr. E. B. Stuart read a paper on *Rosanilin as a Test for Alcohol* as an adulterant in essential oils, showing it to be unreliable under ordinary circumstances. The following honorary members were elected: H. H. Chandler, Albert E. Ebert, Charles B. Allaire, W. P. Colburn, Charles J. Hurlbut, John Birks, G. C. Wheeler, L. A. Lange, E. B. Stuart and A. G. Vogeler.

After the passage of resolutions of thanks an adjournment was had, and in the evening the members and guests sat down to a sumptuous banquet at the Peoria House.

EDITORIAL DEPARTMENT.

THE MEETING OF THE AMERICAN PHARMACEUTICAL ASSOCIATION at Kansas City was well attended, the unusually low railroad fares prevailing at the time having induced many members from the Atlantic States to undertake the journey to the place of meeting, which is from 1,000 to 1,500 miles distant from their homes. Quite a number of ladies had joined the parties traveling by way of Buffalo, Southern Canada and Toledo, or by way of Washington, Parkersburg and Grafton to St. Louis and thence to Kansas City. A large party, going by way of Buffalo, was delayed on the way in consequence of a strike by the railroad employees and did not reach St. Louis, as contemplated, on Sunday morning. Those taking the Southern route were hospitably received by the pharmacists of Cincinnati, where they enjoyed the comforts of the Grand Hotel. Joined by the Cincinnati members and their ladies, the party had a pleasant journey to St. Louis, where excellent accommodations had been provided at the new Southern Hotel and where they were the recipients of the hospitable attentions of the pharmacists of St. Louis.

At Kansas City no one hotel was large enough to accommodate all the visitors, but all were well taken care of under the circumstances. The Local Secretary, Mr. Wm. T. Ford, and the pharmacists generally of the city did all that could possibly have been wished and, when it is remembered that none of them had ever met the American Pharmaceutical Association, their attentions and those of the citizens of the place of meeting are deserving of all praise; the more so, since the unusually hot weather

and lack of rain at the time extending over a great portion of the North American continent made the sojourn in a new city not very enjoyable With the thermometer usually in the nineties, with little shade and plenty of dust in the hilly streets, the situation was not excessively attractive; but, notwithstanding the grumbling complaints about the arrangements provided by the weather clerk, the party enjoyed themselves as well as could be done under the circumstances and bore the molestations incidental to a continuous sweltering atmosphere with commendable good humor. In the meeting-room, the members found it somewhat conducive of comfort to divest themselves of their ordinary coats and sit with their thin linen dusters on, and even these it was in some cases found desirable to lay aside.

The Kansas City meeting being the first at which the newly created Council was in active duty, the members of this body were well provided for with work between the sessions; all that were present at the meeting attended to their duties with good will and with laudable energy, relieving the Association of most of the routine business which formerly occupied so much valuable time. The effect of this relief was noticed in the discussions on the papers read, which were fuller than at many previous meetings and would have, doubtless, been still more participated in but for the enervating influence of the solar heat.

Before sunset on Wednesday, August 24th, the pharmacists of Kansas City took the visiting ladies and members to a drive through the city and its environs, affording an opportunity of viewing the industrial and commercial enterprises and the rapid growth of this important place, and the improvements undertaken in various directions.

On Thursday evening the visitors, in response to an invitation by the local pharmacists, attended a reception in the rooms of the Board of Trade, where the exhibition of drugs, chemicals, apparatus and other objects of pharmaceutical interest was in progress, partook of the bountiful collation and enjoyed themselves as well as possible.

Taking all circumstances into consideration and notwithstanding the Western pharmacists were not quite as largely represented as had been anticipated, the meeting was a decided success and doubtless productive of much good. The papers read, of which we have given a synopsis in our last number, were mostly of more than passing interest; scientific and practical information was well brought out, and interest in pharmaceutical matters and in the national association was thoroughly awakened in a section of the country that had thus far not witnessed a gathering of pharmacists from nearly all parts of the country.

An excursion farther west had been planned by the Pharmaceutical Association of the adjoining State of Kansas. Its destination was Santa Fé, New Mexico; but since on this trip the mountain region of Colorado was not reached, another excursion to the latter State was arranged, the party being increased by several who feared the possibility of being detained in New Mexico through an interruption of communication by wash-outs of the railroad track, which had repeatedly occurred during the past summer. However, a party numbering about one hundred left Kan-

sas City on the morning of Friday, August 26th, by the Atchison, Topeka and Santa Fé Railroad, visited Lawrence and the Kansas State University and, at Topeka, were hospitably entertained by the resident pharmacists. The journey across the plains lasted the whole of Saturday, when Coolidge was reached where the country became more mountainous. After a stop of several hours at Trinidad, the tunnel near Ratan, which is 2,500 feet long, was reached, but most of the party started afoot over the mountain—8,000 above sea-level—the highest point reached during the journey. The next stopping-place was Las Vegas, in New Mexico, at an altitude of 6,452 feet, a town of about 6,000 inhabitants, with seven drug stores and, in the old town, with houses built of adobe or sun-dried bricks, the walls being very thick. Here the churches and other places of interest were visited, and near morning of August 29th the journey was resumed and Santa Fé was reached—the oldest city in the United States—which, when discovered by the Spaniards in 1541, was an old Indian village or pueblo and has retained much of the quaintness and oddity of its early existence, though fast changing by the influx of American improvements. The river runs through the town; the burro or jackass is the usual burden carrier; the houses are mostly one story high and, like the old churches, are built of adobe; the streets are narrow, without curbing and without drainage. The Plaza or public square embraces several acres and is surrounded by the governor's adobe "palace," hotels and principal business houses. A few of the latter, several private residences, a college building, a Methodist church, a hotel and a hospital are the only buildings erected of other material than adobe.

Tuesday, August 30th, found the excursionists homeward bound. The ancient ruins of Peco Church were visited, also the hot springs (temperature 120°F.) about six miles distant from Las Vegas, and Kansas City was again reached after an absence of one week.

The Colorado excursionists numbering over forty, including ten ladies, took the Union Pacific Railroad from Kansas City on Friday morning, August 26th, and, after an uninterrupted ride of 32 hours reached Denver towards evening on the next day. On passing through Lawrence, they were greeted with music by the band which afterwards accompanied the tourists to New Mexico. The ride over the great plains—the rolling prairies of Western Kansas and Eastern Colorado—afforded a novel sight by the absence of trees and rivers, the monotony being occasionally relieved by a habitation or small settlement, by a dry river-bed, by herds of grazing cattle, by a startled antelope, by colonies of prairie dogs, notably by the cacti and numerous flowers of all hues and, on one occasion, by the emblem of stern justice—the terror of horse-thieves and other malefactors—the gallows, which could be seen for many miles in the distance. The sight of the Rocky Mountains was greeted with delight. In the afternoon a heavy thunder-storm passed along the mountain sides and a refreshing shower, when nearing Denver, was a welcome relief from the hot southerly winds of the plains. Denver has been in existence only for about 20 years and numbers now over 40,000 inhabitants. The "Queen City of the Plains" affords a magnificent view of the Rocky Mountains, from which

it is distant about 12 miles, and the peaks of which can be traced for a distance of nearly 200 miles. The broad streets are shaded by cottonwood trees and are mostly bordered by rivulets of water brought twenty miles from the mountains for irrigation. The buildings are attractive and even elegant, and the streets and stores are in many instances illuminated by the electric light. At the Windsor Hotel the comforts of a first-class house were found.

On the following morning the party was joined by six members who had left Kansas City on Friday evening. Various places of interest were visited, and in the afternoon a visit was paid to the works of the Boston and Colorado Smelting Company at Argo, permission having been obtained through the courtesy of Senator Hill. In roasting the ore the sulphides are converted into sulphates, the silver sulphate is dissolved in water, the metal is precipitated by copper plates and the dissolved copper is recovered by precipitation with iron plates.

From Denver to Colorado Spring and Manitou, the railway ascends the valleys of the Platte and of Plum creek, until Divide is reached, having an altitude of over 7,000 feet, or 2,000 feet higher than Denver. Palmer's Lake, situated on the summit, has an outlet northward to the Platte and southward to the Arkansas river. The curious forms of the rocks along Plum creek—suggestive of castles, towers and fortifications—give place on the southward trip to the weird and fantastic monument-like structures of Monument Park, a corner of which is traversed by the railway. From Manitou, where several other members were met, who had come by way of Pueblo, excursions were undertaken to the Garden of the Gods, with its balanced rocks and grotesque masses of red sandstone and white stone, towering often perpendicularly to the height of 300 or 400 feet; to Ute Pass and Rainbow Falls; to Williams' Cañon and the Cave of the Winds; to the various mineral springs and to the numerous tents where many residents of Western cities rusticate during the summer months.

On Tuesday morning several of the party ascended Pike's Peak, 14,147 feet high, but only 8,000 feet above Manitou. The larger number took a drive to South Cheyenne Cañon, with its imposing precipitous walls, and at the head of which a lively stream of water falls in seven cascades from the height of nearly 500 feet. The entire party reached the Windsor, at Denver, on the same evening.

On Wednesday, August 31st, a westward trip was taken by a narrow-gauge branch of the Union Pacific Railroad. At Golden, 15 miles from Denver, the road enters Clear Creek Cañon, having been cut into the solid rock, the cliffs towering on either side almost vertically to the height of from 1,000 to 2,500 feet. From the town of Black Hawk, the railroad climbs, by a series of "switchbacks" five miles in length, the mountain sides, until it reaches Central City, distant one mile but located 500 feet higher, at an altitude of 8,343 feet. Here the tunnel in course of construction by the Bonanza and Union Mining Tunneling Company was visited, also the entrance of the Bobtail Mine and the stamping mill of the latter, where the precious metals are extracted from the ore by the amalgamation process.

The party took the cars back to Big Hill and from Forks Creek, by a branch road, to Georgetown, situated 8,514 feet above sea-level; and on the following morning, Thursday, thirty of the party drove ten miles towards Gray's Peak, having an elevation of 14,341 feet, the final ascent, four miles, being made on horseback. Some of the party, which included seven ladies, felt the effect of the rarified air—causing accelerated circulation, nausea and dimness of vision. All returned in safety. The remainder of the party, including one lady, ascended the mountain to Green Lake, a distance of 2½ miles, with a rise of 1,700 feet. The placid lake, 10,200 feet above sea-level, encircled by towering mountains, was crossed in row-boats and the Battle-ground of the Gods visited, a wilderness of huge rocks scattered about and piled up in the utmost confusion between Green and Clear Lakes. In the afternoon the Devil's Gate and Bridal Veil Falls were visited.

On Friday most of the party returned directly to Denver, while about ten spent the greater part of the day at Idaho Springs, 7,512 feet above sea-level, and received the kind attentions of Hon. M. Moore and T. B. Bryan. A bath in the water of the hot soda spring was enjoyed by all, and a visit to the big tunnel, which is being worked into the Seaton Mountain, was instructive and full of interest.

On the same evening a portion of the party left Denver on their return trip to Kansas City, and on Saturday, while crossing the plains, were gratified with a magnificent view of a mirage towards the south—a broad strip of land looming up above the horizon, leaving the intervening space of the appearance of a mighty river.

The remainder of the party, on Saturday, took a trip to the South Park along the cañon of South Platte River, through wild and romantic passes and over Kenosho Summit until Jefferson was reached, where the train was taken back to Denver, and on the following day to Cheyenne and Omaha, thence to Chicago and home.

The distance traveled by rail was, for most of the Eastern members, between 4,400 and 5,600 miles, the southern route being the shortest. "Quantum sufficit," remarked a fellow excursionist.

REVIEWS AND BIBLIOGRAPHICAL NOTICES.

Proceedings of the Eleventh Annual Meeting of the New Jersey Pharmaceutical Association, held in Trenton, May 18 and 29, 1881. Camden. 8vo, pp. 66.

Proceedings of the Ohio State Pharmaceutical Association at its Third Annual Meeting, held in Toledo, May 18 and 19, 1881. Cincinnati. Pp. 75.

A condensed account of the transactions at both meetings will be found on page 313 of our June number. On page 567 of the present number we publish a paper read at the Toledo meeting and since then revised by its author.

Artificial Anæsthesia and Anæsthetics. By Henry M. Lyman, A.M., M.D., Professor of Physiology and Diseases of the Nervous System in Rush Medical College, Chicago, Ill., etc. New York: William Wood & Co. 1881. 8vo, pp. 338.

Considering that the author of this book professes to present not a work of original research, but rather a compilation derived from the works of the writers who have investigated the subject of artificial anæsthesia, he has produced a readable and instructive volume, which, as the title indicates, is intended for the use of the physician. It gives a brief history of anæsthesia, followed by a description of the phenomena and by an account of the physiology of anæsthesia, the administration of anæsthetics, the method of producing anæsthesia, the various inhalers used, accidents observed and their treatment, the use of anæsthetics for special purposes, etc. The larger portion of the book treats of the various anæsthetic substances, of which nearly fifty are mentioned. The most important ones are chloroform and ether, to which, respectively, 95 and 20 pages are devoted; that 27 pages are devoted to alcohol is warranted by the fact that nearly the whole chapter treats of the physiological action of this substance. Chloral hydrate, another important anæsthetic agent, occupies 18 pages, chiefly referring to its physiology and therapeutics. The physical and chemical characteristics of the various anæsthetic substances are given in brief, but, as a rule, sufficiently in detail for correct identification.

The work forms the ninth volume of Wood's Library of Standard Medical Authors.

Effects of Pilocarpin on the Color of the Hair.

Two papers by Dr. D. W. Prentiss, of Washington, D. C., have been reprinted in pamphlet form from the Philadelphia "Medical Times." A young lady having light-yellowish blonde hair commenced to take hydrochlorate of pilocarpin in doses of 0·01 gram (gr. $\frac{1}{6}$) on December 16th; a change in the color of hair was noticed December 28th, and it continued to grow darker until May 1st it was almost of a pure black. The color of the eyes had changed from light blue to dark blue. The pilocarpin was discontinued February 22d.

The second case is that of a baby, 14 months old, who, during an attack of membranous croup, was treated with pilocarpin hydrochlorate; in about two weeks the hair was decidedly darker in color.

Etude sur les Liquides extraits des Kystes ovariques. Par le Dr. C. Méhu, Pharmacien de l'hôpital de la Charité. Paris: Asselin & Co. 1881. Pp. 32.

On the liquids taken from ovarian cysts.

The author has examined a large number of liquids obtained on the puncture of ovarian cysts. The total amount of liquid obtained in each case varied between 220 grams and 38 kilograms. One kilo of the filtered liquid yielded between 10·96 and 149 grams of dry substances, the unfiltered liquid occasionally 209·18 grams. This dry residue consisted of variable quantities of organic matter, while the inorganic matter obtained by incineration was pretty constant, varying only between 7 and 9 grams, and being mostly between 8·0 and 8·5 grams for 1 kilo of the liquid.

Fig. 1.

Fig. 2.

Drawn from Nature by W.P.C. Barton. Tanner Vallance Kearny & Co. sc.

RUBUS VILLOSUS.

(Blackberry.)